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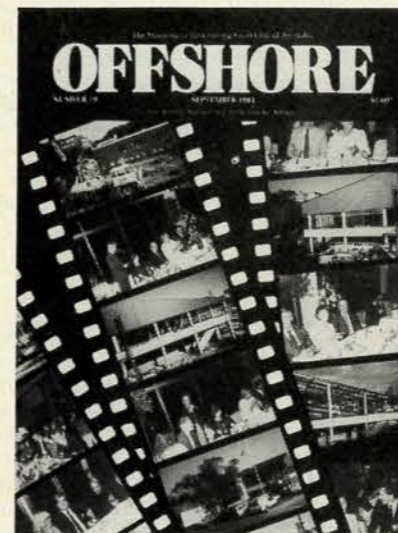
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The Magazine of the Cruising Yacht Club of Australia

OFFSHORE

Number 79

August/September 1984



Cover: The Cruising Yacht Club of Australia has been transformed in recent months, and the new dining room facility is open, doing a roaring trade. At the recent 'Gala Opening' Commodore John Brooks thanked immediate past Commodore George Girdis for his work over the past ten years as head of the Development Committee which shepherded the project to completion. Architect Richard Christian was also there to receive thanks for a job well done. More pictures on pages 5 and 6.

PHOTOS BY ROBIN COPELAND AND DAVID COLFELT

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Offshore Signals

Letters

Hamilton Island Race Week handicapping

Dear Editor,
We read with great interest John Woodford's article about the inaugural Hamilton Island race week in the April-May issue of *Offshore*. We are glad he enjoyed himself and hope that he (and all his mates) will be back again next year.

John's comments about the scoring system are interesting, and we have considered his views at some length. He says, in part, "A gear failure which prevents a yacht finishing one race should not prevent the yacht from winning the series".

We know of no scoring system which would allow a boat with a DNF (which she must count in her total) to get up and win a series, particularly if the top few boats are being consistently well sailed. This was certainly the case this year and is amply demonstrated by the fact that *Silver Shamrock* had an average placing slightly worse than 4th, yet could only manage 5th overall in the series.

The only way to allow a yacht to have a DNF and still win is to have a discard race. We want to encourage racing between well-found and soundly rigged yachts, and we believe that getting to the finish line should be an essential part of winning. Yachts which are so marginally rigged that they cannot always get to the finish should not be pandered to. For this reason we choose not to allow a yacht to discard her worst result, and we notice that the organizers of the Southern Cross Cup, Admiral's Cup and

level rating championships share our view on the subject.

We were happy with the system we used this year. After all the races only six points separated the first five boats (and, in fact, these five boats went into the last race only four points apart - very exciting stuff). We really can't imagine how we could have got a better result. We also noticed that John Woodford's system would not have had any effect at all on the top six boats.

We hold the firm view that a yacht which finishes all the races should always beat a yacht which doesn't and for this reason we have decided to use the same system for 1985 as we did for this year.

Cheers, and keep up the good work.

Hutchen, Hoban, O'Donoghue
Race Committee, Hamilton Island Yacht Club.

[David Hutchen, Warwick Hoban, Leon O'Donoghue]

Piracy

Dear Sir,

I have been commissioned by the Conway Maritime Press, in conjunction with Lloyd's of London Press, to write a book on modern day piracy. The GCBS (Mr Horace Davy) has also given me their support following on my early book, *Merchant Ships at War - the Falklands Experience*.

This book will not only draw attention much more widely to the current situation but it should make a thoroughly interesting story. It needs to be supported quite extensively by personal experiences from those who have suffered.

Thanks to the co-operation of shipowners and shipping agencies, information regarding attacks on merchant ships is beginning to flow in, and a reasonable picture is beginning to emerge. However, as you are well aware, piracy is not confined solely to merchant ships, and among other sufferers are yachts, mainly cruising yachts.

I am writing you to ask if you or any of your Members have any knowledge of attacks on yachts or could give me the address of anyone you know of who has suffered from the unwelcome attentions of these criminals. I am particularly interested in obtaining first-hand accounts and, if possible, photographs of the boat concerned.

Yours faithfully

G.R. Villar, Captain DSC RN

The address is C/Carmichael and Sweet (Portsmouth) Ltd., 32 Arundel Street, Portsmouth, Hampshire, England PO1 1NL - Ed.

Design breakthrough

Dear Editor,

About 12 months ago your magazine ran its first 'Young Designer' article featuring myself and a proposed 39' yacht design.

Due directly to the exposure gained from *Offshore* I received two positive inquiries. Both wanted 50 footers, and while they didn't want the same vessels, they were both happy to use the same lines and sail plan, but that was the only similarity; one is of timber and the other aluminium.

Enclosed are sail plan, hull profile and deck plan drawings of one vessel for Col Montgomery, a MHYC Member. This vessel is to be built by Peter Lauridson of Adelaide. It is timber.

So to *Offshore* magazine and the Publications Committee, I would like to say thank you.

Yours faithfully,

J.R. King

Hamilton Island Series 1985

The success of last year's inaugural Hamilton Island Race Week, in the warm waters of the Whitsundays, firmly established the series on the Australian yachting calendar. The 1985 Race Week will follow the same format, with a few minor changes. The series is scheduled to begin on 13th April and will continue to 20 April; it is a day shorter than



last year to allow the prize giving presentation to commence straight after the last race.

The races will be: two 25-milers; two 35-milers; one overnight race of 175 miles. This long 'Coral Sea Race' is open only to IOR boats; a shorter course of 85 miles has been arranged for Arbitrary yachts.

The organiser, Hamilton Island Yacht Club, has promised lots of activity and enjoyment on the lay days during the week.

It is from Auckland to Hamilton Island. David Hutchen, Series Organiser, is currently negotiating with the New Zealanders. "Even if this race fails to materialise, we are expecting over 150 of the fast racing yachts in the Pacific.

Race week is again sponsored by Castlemaine Perkins. Direct flights to Hamilton Island, cold beer, and the ever growing international standard facilities of this resort will insure the 1985 series is another success.

Lexcen award

The Royal Institution of Naval Architects (Australian Branch) recently presented its "Small Craft Group Medal for 1983" to Ben Lexcen in recognition of his considerable achievements in the design of *Australia II*. The Institute originally planned to present the Medal at its spring meetings in London in April, but Ben was unable to attend those meetings.

Australian Division President Mr J.C. Jeremy made the presentation at the Sydney Amateur Sailing Club, Green Street, Cremorne on July 23.

The previous recipient of the medal (in 1981) was Peter Van Oossanen, in recognition of his research in the design of yachts, a very close colleague of Ben and the *Australia II* team. ●



Ben Lexcen receives RINA Small Craft Group Medal from President J. Jeremy in recognition of his achievements in the design of *Australia II*.

Sailing Committee Notes

Age Allowance. Most Members are aware that Age Allowance has been phased out by the AYF over the past years, resulting in no allowance for the 1984-'845 season. The CYCA has, with the usual tireless help of Gordon Marshall, developed a generous age allowance system that has been adopted by the YANSW.

The CYCA will now race with three handicaps:

- (1) IOR - straight Mk III A rating
- (2) Illingworth - IOR rating plus age allowance
- (3) Club - Arbitrary, as in the past.

Short races will be sailed on:

- Illingworth - Overall (result & pointscore)
- Club - Division (results & pointscore)
- IOR - Overall (results only; no trophies).

Long races will be sailed on:

- IOR - Overall & Division (results and pointscore)
- Illingworth - Overall & Division (results and pointscore)
- Club - Division (results and pointscore).

AWA Sydney-Hobart Race:

- IOR - Overall and Division (results and pointscore)
- Illingworth - Division (results and pointscore)

Blue Water Championship:

- Winner of Overall IOR pointscore for long races

The Illingworth Trophy

- Winner of Overall Illingworth pointscore for long races.

Mark layers. Mark layers are needed assist with laying and retrieving marks for the short ocean races. Here's your chance to assist the Club while having an enjoyable day at sea aboard AWA's *Dameeli*. Contact the sailing office now.

Retroreflective tape. Retroreflective tape must now be fitted to all life jackets, life rings and danbuoys. Packs of tape with instructions are now available from shipchandlers.

Book for your Safety Inspection
Now

6 MHz radio frequency. The Dept. of Communications instructed that 6 MHz was to be compulsory for all Category 1 races from July 1, 1984. The CYCA, due to a great effort by Keith Storey, has been successful in having the department delay the compulsory fitting of this frequency for five years from the last manufacture of International SB 809 radios, of which there are approximately 1100 which cannot have 6 MHz fitted.

- David Kellett
Chairman, Sailing Committee

Dress Regulations

Members and visitors to the Club should be aware that the following dress regulations will be strictly enforced in the new dining room, mixed lounge and veranda.

By-law 16, Dress.

The minimum requirements for dress of Members and visitors in the licensed premises are as follows:

- (a) Before 7.30 p.m.: shirt, shorts and footwear such as sandals and sneakers. (Thongs or the like do not comply).
- (b) After 7.30 p.m.: jacket, shirt with collar, preferably with tie (or cravat). Slacks and shoes and socks must be worn. In summer weather, the jacket may be removed. Tailored shorts and long socks may be worn in lieu of slacks.
- (c) Ladies' Dress: the dress of ladies must approximate the requirements laid down for Members. Shorts are not to be worn after 7.30 p.m.

Anybody not dressed accordingly will be refused admittance.

- Michael Polkinghorne
General Manager

Ocean Racing Championship

Rear Commodore and Sailing Committee Chairman, David Kellett, has announced the distribution of application forms for the 1984 Ocean Racing Championship. This new yachting event has been introduced by the CYCA for alternate years when there is no Southern Cross Cup series.

The Championship this year will include two 12-15 mile Olympic triangle courses outside Sydney Heads the location of which will be north of Manly beach, which will provide good spectator viewing from Manly and Harbor headlands. The final event will be the AWA Sydney-Hobart Yacht Race (double points).

In future years it is intended to increase the number of races in this event to five; this will enable race organisers to include one or more long-distance event.

Yachts eligible are those with current IOR rating from 16-75 feet; however, to compete in the Hobart, yachts must conform to the rigorous rating and safety standards set down for that race.

All IOR-rated yacht owners will receive an application form as will all yachts entered for the Hobart Race.

The CYCA expects about 40 contestants this year. The first two races will take place on Saturday, December 21, the first in the morning and the second in the early afternoon.

The race will be the first in the world to use the new point scoring system developed by AWA Sydney-Hobart Race Director, Keith Storey. ●

Winter Series Results

Division A

- | | |
|--------------|-------------|
| 1. Vengeance | B. Lewis |
| 2. Marloo | G.S. Girdis |
| 3. Nand III | R. Chapman |

Division B

- | | |
|-----------------|------------|
| 1. Springloaded | W.T. Johns |
| 2. Caviar | G. Keon |
| 3. Sagittarius | D. Rowe |

Division C

- | | |
|-------------------|-----------------------|
| 1. Corinthian | R.P. Perini |
| 2. Defacto | W. Saunders & Prtnrs. |
| 3. Endless Advice | R. Stone |

Division E

- | | |
|--------------|------------|
| 1. Vanguard | R.H. Cawse |
| 2. Galactica | P.W. Casey |
| 3. The Maxi | J.W. Wynn |

Division F

- | | |
|---------------|---------------|
| 1. Skipjack | C.H. Roughley |
| 2. Ursa Major | M. Cameron |
| 3. Outrageous | R.M. Hearn |

J 24 Division

- | | |
|------------------|------------------------------|
| 1. Jay | W. Whelan/C. Leddon/P. Breen |
| 2. Hot Chocolate | L. Sutcliffe |
| 3. Slack Alice | A. Nemeth |

Perpetual Trophies

Travelodge Cup: Vengeance (B. Lewis)
 Warren Evans Trophy: Patrice III (P. King)
 Chris Lee Trophy: Huon Cry (R. Reddie)
 Associates Trophy Div. B: Concubine (J. Parker)
 CYCA Overseas Cruise Plaque: Rockhopper (M. & J. de York)



The CYCA marina was a popular venue after the races.

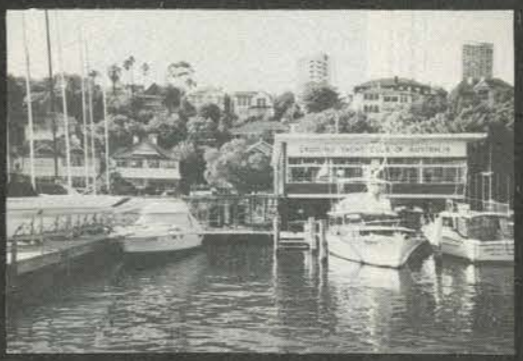
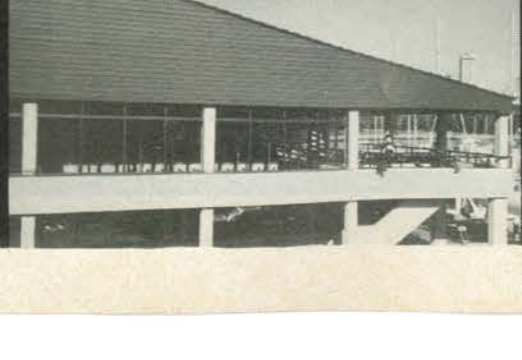
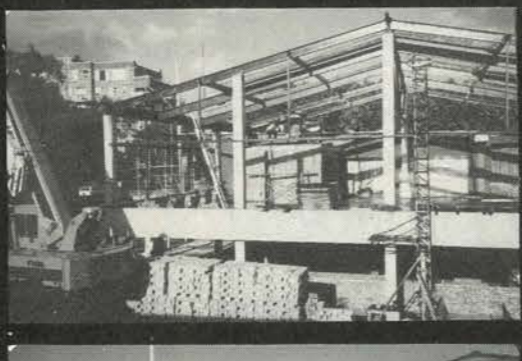
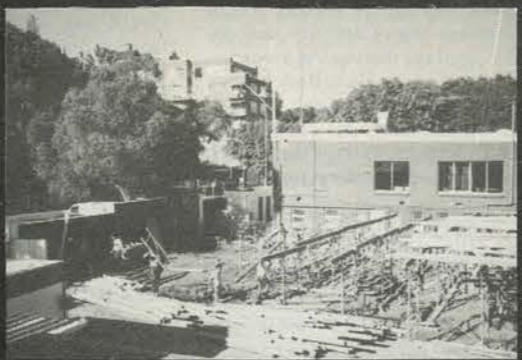
Pictorial Review

For those Members who have not been to the Club recently, a lot has been happening, as the following pictures (by Robin Copeland and the Editor) demonstrate.

Robin Copeland's series shows how the Club was transformed this year.

Stage II development was started immediately and will provide new showers, change rooms and toilets for men and improved women's toilet facilities. Eventually new bar facilities will be installed on the first floor.

The Gala Opening Dinner was well attended. The Club now has a superb dining room and brand new kitchen which will be open to prepare lunch and dinner seven days a week. The dining room facility, with its magnificent harbourside views, is open to Members for private or business functions.



Open Letter to CYCA Members

Dear CYCA Member,

Glenmore Meat Company Pty. Ltd. is proud to have been meat supplier to the recently successful *Helsal II (Spirit of Vanuatu)*, winner of the Sydney-Vanuatu Yacht Race, including IOR. The meat and small goods were specially and individually vacuum packed for the crew, per watch.

The management of Glenmore Meat Company proudly extends a welcome and invitation to Members and visitors to the Cruising Yacht Club to come and inspect our new ultra-modern plant.

We now plan to specialise in vacuum packing meat for Members in races, for cruising parties, and so forth.

We are well known, quality meat suppliers to Sydney's leading hotels, clubs and quality retailers.

Hoping to hear from CYCA Members. Please contact Kevin Chandler, Sales Manager.

Yours faithfully,

Glenmore Meat Company

GLENMORE MEAT COMPANY PTY. LTD.

40 Wentworth Park Road Glebe, NSW.

Tel. 660-3522

(Contact Kevin Chandler, Sales Manager)

CREW OPPORTUNITIES

If you are a skipper looking for crew or a hand looking for a place on a harbour or ocean racer, contact Terry Wise, CYCA Crew Officer, who maintains the Club's crew register.

A comprehensive listing is maintained giving yacht details on the one hand and crew biography and experience on the other.

No fee is paid by yacht owners using the list, but a \$20 registration fee is required from prospective crew, partly to discourage the uncommitted.

People on the register range from new graduates of sailing schools to experienced sailors, a number of whom are new to

Sydney from interstate or overseas.

Preference is given to crew with proven experience, particularly those with AYF qualifications or the overseas equivalent. The inexperienced are encouraged to take a suitable AYF accredited training course before putting themselves forward as crew. This has the advantage of ensuring that only useful people are on the crew list.

CONTACT

Terry Wise
Pacific Sailing School
New Beach Road
Rushcutters Bay, NSW 2011
Tel: (02) 326-2399

CREW AVAILABLE



BIGGLES' COLUMN

by John Brooks

Helsal, fresh from her 'double' (line honours/handicap victory) in the inaugural Sydney-Vanuatu passage race, appeared briefly in Sydney for a new paint job and refit before departing her home port on delivery to her new owner in Queensland. Normally an event such as that would not rate much of a mention - yachts are changing hands all the time, names are changed to protect the innocent. But there is a little bit of nostalgia involved here. This will be the first season since 1973 that the name of *Helsal* has not appeared on the CYCA racing register.

The original *Helsal* was a source of controversy, and therefore legend, before she had even sailed. A 73' 'post tensioned' epoxy, ferro-cement monster launched late in 1973, she displaced 45 tons and attracted an enormous amount of pre-race publicity, speculation and criticism. She was the first ferro-cement ocean racer to appear in the Sydney-Hobart Race, or any major ocean race for that matter, and she flayed her critics by smashing *Ondine's* eleven-year-old line honours record by 2 hours, 14 minutes.

That was the start of years of line honours battles up and down the east coast, usually with the 'old' *Apollo*, which was perhaps the only yacht that was as well or better known to the public than *Helsal*. Like *Apollo*, *Helsal* acted as a prolific training ship for Sydney ocean racing crewmen, and the two shared some great racing together. *Apollo* was a 57' light displacement 'David' to the *Helsal* 'Goliath', but she usually came out on top in light-to-medium conditions. Then, ironically, the situation was reversed. *Apollo* was destroyed on the outer reef of Lady Elliot, to be replaced by a larger, heavier version; *Helsal* was sold into slavery as a charter vessel, to be replaced by a lean, lightweight fractional-rigged flyer, and the battle continued for a few more years under the same names.

Sometimes, however, the names were different. As Tony Fisher's availability for ocean racing declined, *Helsal* was chartered out for racing, taking on some-odd noms de guerre - *Our Town Newcastle*, *Gib an Inch*, *Spirit of Vanuatu*. But the leading hands associated with her usually remained the same, and literally hundreds of NSW ocean racers got their first taste of big boat racing on *Helsal's* grey decks.

Her last sailing master was Dick Bearman, and, coincidentally, the first *Helsal* sailing master, Dave Lawson, took charge for the delivery north. She left us looking squeaky clean in new paint and with yet another new name *Spirit of Queensland*.

For the moment the Fishers have no plans to replace her, so one of the best known names in Australian ocean racing will leave the register. I never sailed on either of the *Helsals*, but she was often the 'enemy', so may I say, on behalf of the opposition, thank you Tony and Robbie for some great racing.

o o o

A disappointing performance by the Australian teams in Hawaii emphasised the aging nature of our front-line racers, a situation that is about to change with the launching of a new crop of IOR yachts. Stan Edwards' new *Margaret Rintoul 4*, a Frers 50, should be near completion by the time this is published. With *Once More Dear Friends* sold, Peter Kurts will re-enter the fray with a Farr 43 being built by John McConaghy.

Hedley Calvert, the flying apple farmer from Hobart, has a new Farr 40 in the water and his brother Don has a Castro minimum rating fractional rigger under construction. Queensland's Nick

Girdis is building a Frers 43 in New Zealand in the same shed that produced *Shockwave*. If it goes as fast as *Shockwave*, Nick will be very happy but could probably do without the same controversy.

In Perth Alan Bond is putting the finishing touches to *Apollo VI*, a fractional Admiral's Cupper designed by some guy called Lexcen. Lou Abrahams is very happy with the performance of *Challenge 3* at the Clipper Cup and has definite ideas about minimising rating and improving boat speed. If all of these contest the Admiral's Cup trials early next year, the action of Port Phillip Bay will be fast and furious and a viable, up-to-date Australian team should emerge.

ORCA will, as usual, organise the trials which will be conducted by Sandringham Yacht Club over four 25 milers, one 250 miler, two 120 milers and one 40 mile race. The team will be selected on a points score basis consisting of single points for the short races and double points for the long races, with a discard system which will be the lesser total of two of the short races points score or one long race points score. The points score system should avoid much of the controversy which has dogged the AC team selection process in recent years, and the rules governing yacht charters for national team trials have also been extended and clarified, all of this at the annual meeting of the AYF Offshore Committee.

o o o

Although only twelve months has elapsed since *Australia II* made history at Newport, the level of 12-metre activity in Australia and around the world, and the media coverage of that activity, suggests that the Perth defence is just around the corner instead of 2½ years away. It seems that not a month passes that the 12-metre syndicates are not in the news, so to join the fashion I can report that this column has had an exclusive, sneaky look at a top secret photograph of the new *Courageous II* which appeared in the *Providence Sunday Journal* last month.

Surprise, surprise, it boasts a winged keel very similar to Ben-Bob's masterpiece. The accompanying article blithely states that the NYYC's *America II* syndicate has also launched the first of what would probably be three boats to be built during the Syndicate's bid to regain the Auld Mug. Recently a journalist calculated that the total American syndicate's financial com-



mitment to the next America's Cup challenge exceeds the public money spent on the Los Angeles Olympics. Makes you wonder doesn't it?

On the subject of 12-metres, many members will remember Neil Harvey, a *Gretel II* crewman in 1974, since prominent on *Kialoa* and *Acadia*, and more recently as sailing master of *Bob Bell's Condor*. After ten years of regatta chasing, 'Harv' has gone ashore to become Sales Manager Southeast USA for Barent. He and Sarah have settled in Florida. An interesting statistic would be the number of expatriate ANZAC's with a yachting background who have settled in the US over the last decade, which is exactly the sort of trivia I used to extract from *Shipway* at a moment's notice but, alas, he has defected to the crass commercial world.

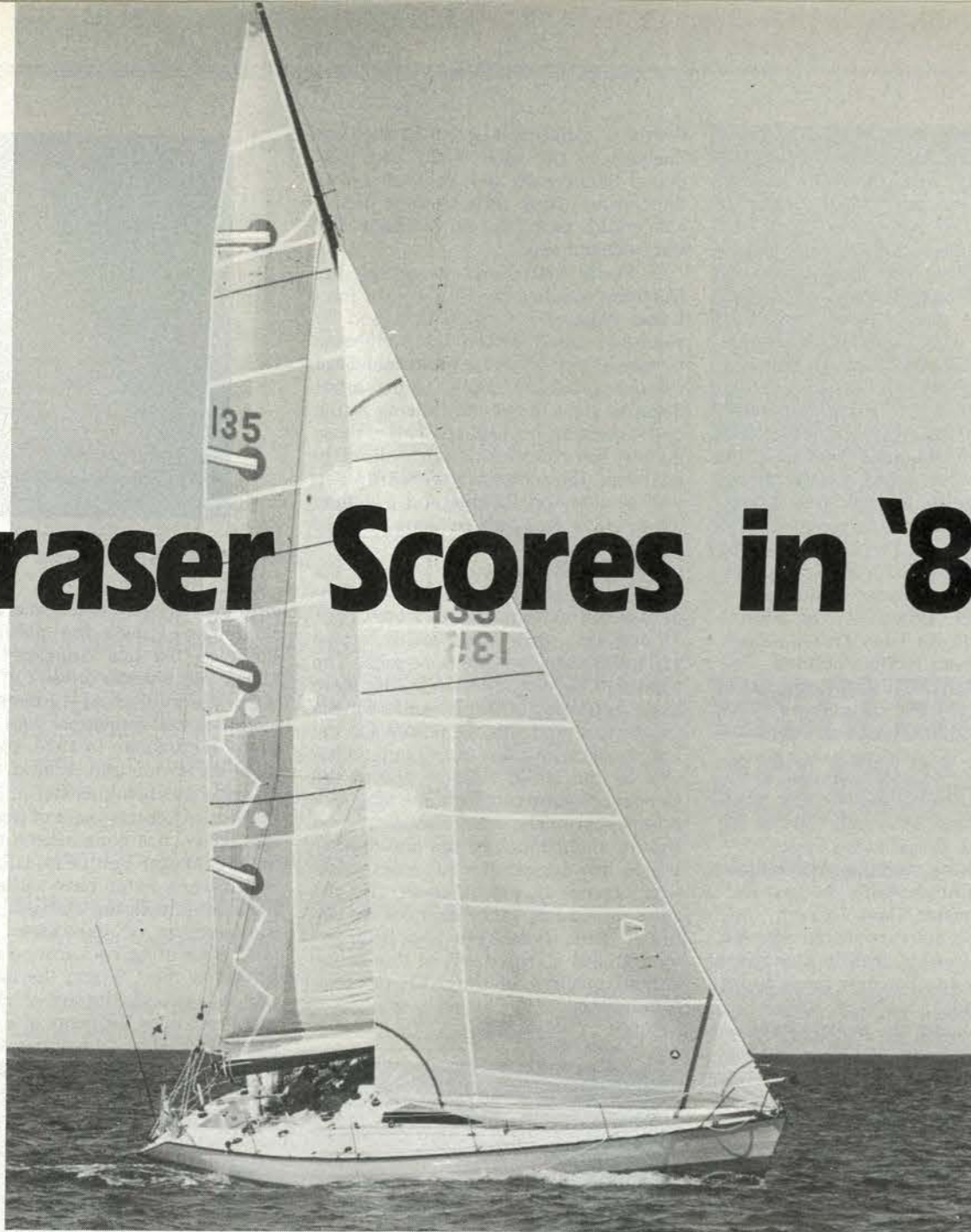
Editor: What nonsense. You could only have got that America's Cup item from *Shipway*. He was probably on holidays with the in-laws on Rhode Island. I don't know why we print this stuff.

Biggles: Well, I, er, ah!

Editor: Furthermore, what you know about 12-metres could be engraved in large uppercase letters on a pin head.

Biggles: (With dignity) Ah, well, I have you there. Like everyone else in Australia, I became an instant expert on 12-meters in September last year. □

Fraser Scores in '84.



WHEN "The Gambler" won the Sunshine Coast Offshore Regatta (S.C.O.R.) in '84, it was no gamble; she carried a full wardrobe of the latest Fraser Sails. The fact that the boat was launched just prior to the regatta leaving no time for evaluation or fine tuning, makes the result even more impressive. "The Gambler's" sails were designed in

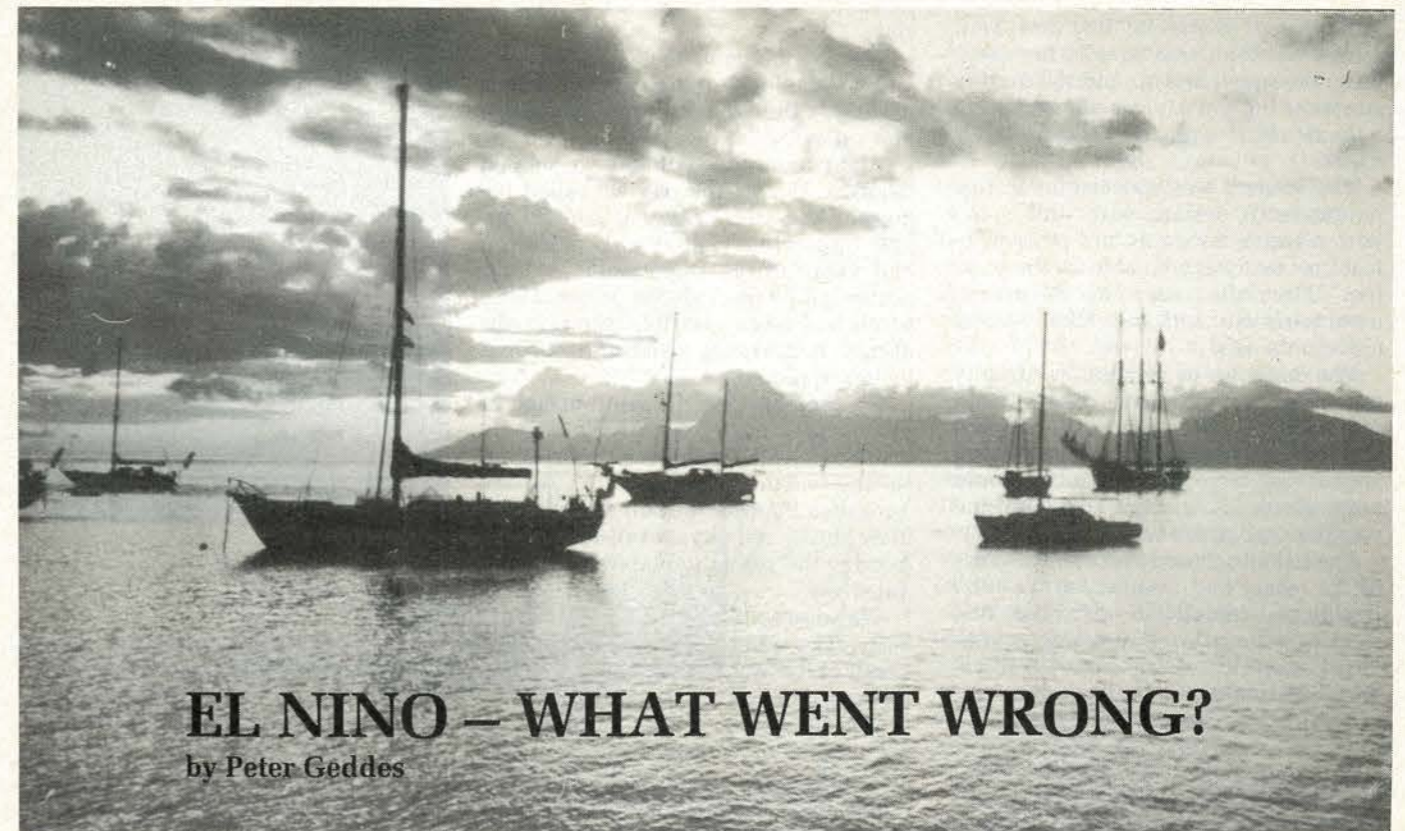
Sydney using the loft's sophisticated computer facilities and constructed in Brisbane from the latest available Kevlar and Mylar fabrics. "The Gambler" is not the only offshore yacht to have benefited from Fraser Sail Technology in recent months. Fraser Sails were fitted to three of the first five

yachts overall in the 1983 Sydney to Hobart race and to two of the three yachts chosen to represent Australia in the 1984 Clipper Cup.

*Don't Gamble
Contact Fraser Sails in your State.*

Fraser Sails

N.S.W. 6 Neild Ave., Rushcutters Bay, 2011. Phone (02) 33-4836, 33-4341
W.A. 345 Stirling Hwy., Claremont, 6010. Phone (09) 384-5446
QLD. 36 Angus Ave., Fortitude Valley, 4006. Phone (07) 52-8262
TAS. 44 Napoleon St., Battery Point, 7000. Phone (002) 34-7577



EL NINO — WHAT WENT WRONG?

by Peter Geddes

Crossing the Pacific from America to Tahiti is traditionally one of the most comfortable and predictable voyages that can be undertaken in a small boat. Referred to as the 'milk run' it has been successfully voyaged in all sorts and sizes of boats. The goal at the end of this easy journey is wonderful French Polynesia, which is made up of the mountainous Marquesas, the low coral atolls of the Tuamotus and, the dream of every mariner, Tahiti and the Society Islands.

So it was with great anticipation that we motored from Panama on the first leg of the voyage to the Galapagos Islands. But at that stage we had not heard of El Nino.

The weather patterns in the Pacific are well documented and can be studied for each month of the year from the United States Defence Publication No. 107 (*The Atlas of Pilot Charts, South Pacific Ocean*).

When deciding to cross from Panama to Tahiti we studied the months of January and February which suited us for business reasons.

The Chart indicated that, after passing the doldrums just north of the Equator, we could expect predominantly trade winds from the NE or SE, with a west bound current of up to 2 knots. Calm days per month were practically zero.

It also stated that February brings the highest frequency of tropical storms,

but they were observed solely in the northwestern zone. The last serious cyclone experienced in Tahiti was many years ago.

Panama is 9°N and the Galapagos Islands are situated on the Equator to the southwest. Expecting to motor most of the way through the doldrums, we were pleasantly surprised to pick up a good wind and covered the 850 miles to St Cristobel in just under five days. We were also surprised to find this normally dry island almost awash — road-work washed away, low-lying land under water. "But you should see what has happened in Ecuador" the local Naval Commander told me; the flooding in the coast towns was the worst ever experienced, "something to do with the sea heating up" he explained.

We were sorry for the Ecuadorians, but it was O.K. for us as we snorkeled about looking at the sea life and catching crayfish. Not as many birds as usual, the locals told us, but there was still plenty to see. The islands that enchanted Darwin are still marvellous, and the Ecuadorian Government is doing all possible to preserve this natural sanctuary. Seals and tortoises swim past the boat, flamingoes can be seen on the lagoon near the village of Villamil, on Isabella. The iguanas scamper over the rocks just out of the town of St Cristobel.

Galapagos to the Marquesas is a long haul, almost 3000 miles. But the

weather charts told us that once we got a bit of south we would pick up the easterly trades and up to 2 knots of west-going current. It sounded great.

So we motored off heading south waiting for these favourable conditions, but we were to be disappointed. We had alternating calms and storms — frustrating sailing. The wind vane self-steering was no use in these conditions, and the automatic pilot was using too much power.

The scenario was something like this. We are becalmed, genoa furled and the main and mizzen strapped out to minimize the slopping and banging. A cloud appears on the horizon and heads towards us. The wind comes, first as a zephyr, increases in strength, and it starts to rain. Close all hatches. Wind strengthens, roll out the genoa. The wind strengthens to 20-30 knots, we pull away holding on to as much sail as possible. The wind continues for maybe two to three hours accompanied by rain, and then it abates. The sun comes out. Open the hatches. The wind drops. Roll up the headsail. Frustrating, unpleasant and dangerous, especially at night. Our worst day we travelled 61 miles, and our very worst was nine miles in 12 hours.

Finally after 25 days we were glad to see the island of Hiva Oa, green and mountainous and cloud covered. Here again the Marquesas had been inundated with rain and unusual weather.

We moored in Atuona Bay and went ashore between rain squalls for shopping. We squelched around the muddy streets of the town, slipped and slid in a land rover over the mountainous roads.

The scenery was spectacular in this mountainous island, lush and green with mangos, coconuts and other tropical fruit that was available for the picking. Waterfalls cascaded down the mountainsides and over the vertical cliffs to the sea.

The harbour of Atuona is usually calm and peaceful but a heavy swell was rolling in from the northwest and many of the usually peaceful bays and anchorages were untenable. It should have given us a clue that unusual weather was on the way.

The island schooner was late because of the recent bad weather, so we were unable to refuel our depleted fuel stocks in the town. I was able to purchase two 44s of diesel from a contractor building the new port installation.

So time was running out for us as we motored out of the harbour on the last stage of our voyage - Tahiti, lying about 900 miles to the southwest. We were hoping to call at Fatu Hiva and at least one of the Tuamotu chain. Fatu Hiva, another of the Marquesas, is spectacular. As we approached the Baie D'Onai we counted five waterfalls cascading hundreds of metres into the sea. But the surf was breaking into the normally protected anchorage and we were unable to anchor.

So in a light northerly we headed for Ahe at the northwest of the Tuamotu Archipelago. As we swung to the west the wind gradually increased in strength. We were close reaching on the rhumb line in winds gusting up to 30 knots.

About 2200 hours on the third day out we were hit by a sudden wind squall accompanying a severe electrical storm. The wind gusts were over 60 knots and our mizzen sail was torn to shreds. We received news on the radio next morning that the storm that had passed had developed into a tropical cyclone Orama centred about 100 miles to the southwest. There were winds of 140 kilometres at the centre.

We were encountering winds of 40-50 knots but were able to reach at about 70° apparent. We set three small sails and the boat handled the conditions well. However, we had to keep all hatches closed as the big confused seas rolled over the deck. The humidity below was the hardest thing to bear.

We kept track of the centre of the storm by radio and at one stage it looked like doubling back on itself. We were very grateful for our Satnav, as we did not see the sun or stars for three

days.

The low atolls of the Tuamotus rise only to the level of the coconut palms, visible in these conditions from only a few miles.

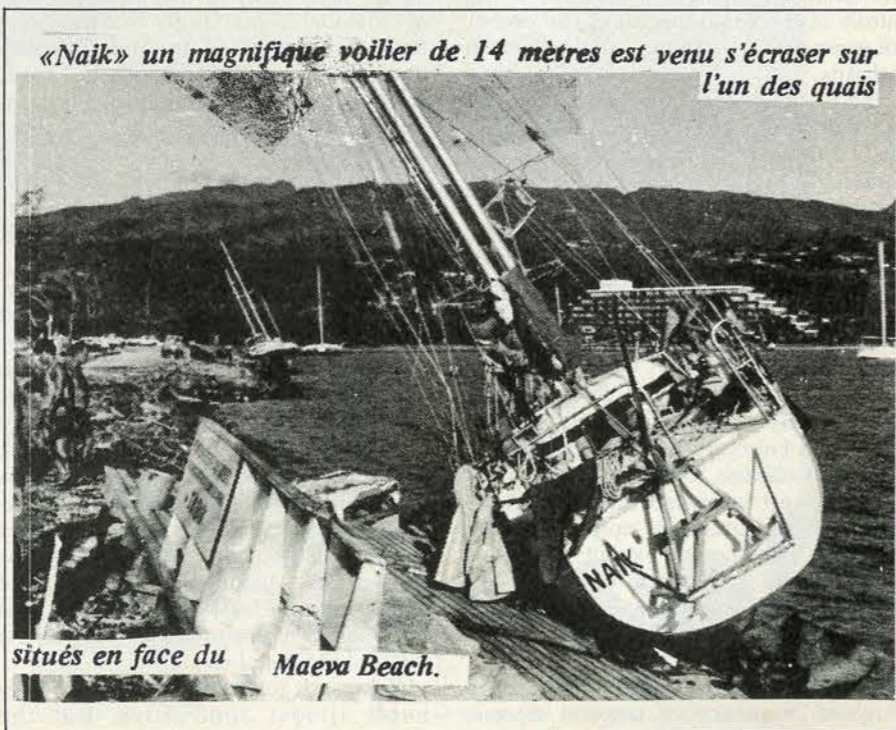
At dawn on the sixth day we sighted Manahi. During the day we sailed between Ahe and Rangiroa, grateful for the improving visibility. Landing on the islands was impossible as huge waves rolled through the passes. These atolls had taken a terrible battering, the flimsy houses destroyed and coconut palms uprooted.

On the next day the wind abated as the cyclone moved away. We bent on more sail and headed south for Tahiti as the weather improved. As we approached Papeete the sun set on a brilliant dusky red sky. A full moon rose, turning the sea an unbelievably beautiful silver.

We were sailing in a 15 knot norwesterly. The whine of the wind and the crash of the waves gave way to a much more gentle sound as we glided towards the island. It was the last hand the capricious weather dealt to us. But our boat was to be exposed to further indignity as she lay moored at Maeva Beach in Tahiti after we had returned to Australia.

Tropical Cyclone Vena swept over Tahiti with Maeva Beach on its direct path. Our boat was the only one not driven from its mooring, and ten yachts littered this beach after the storm abated.

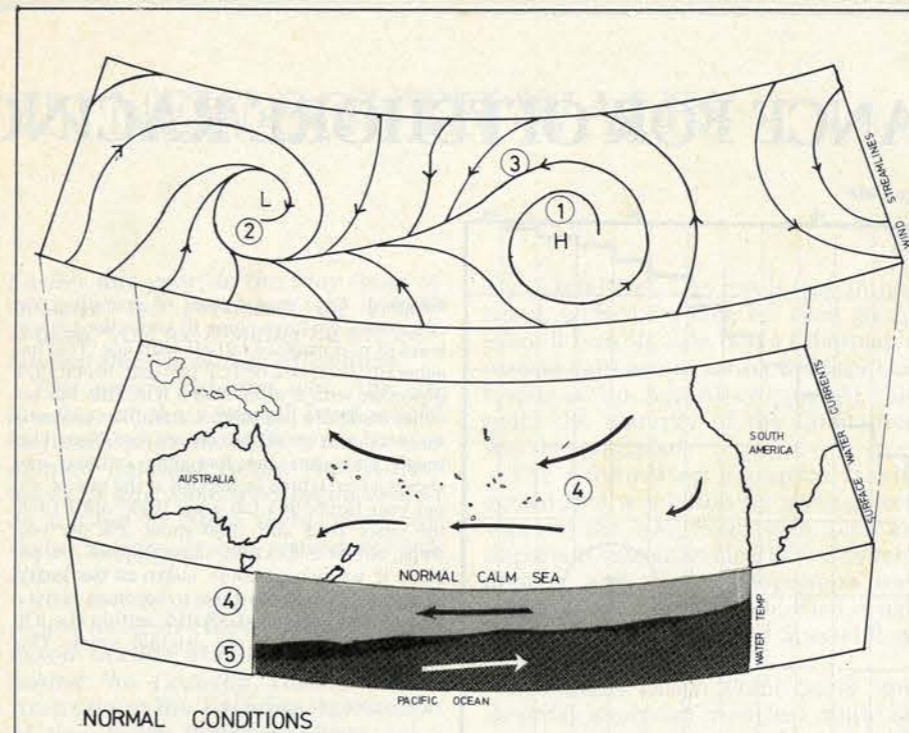
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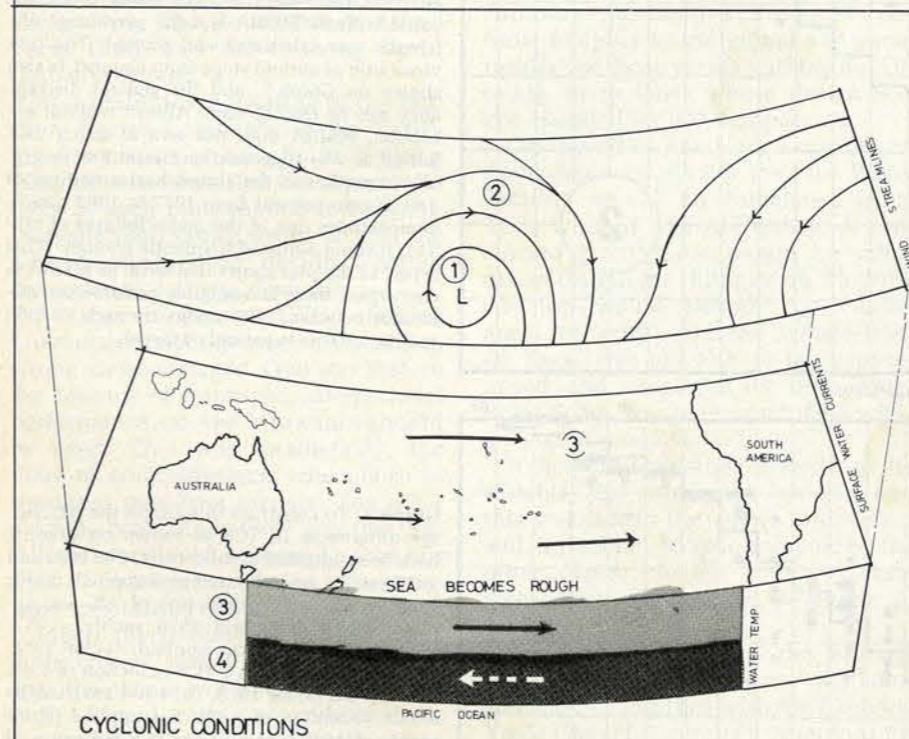
Moored in Tahiti.

El Nino

What we had experienced was the result of the periodical upset in the global weather pattern referred to as El Nino. The name comes from the observation, in the eastern side of the Pacific - in Ecuador and Peru - where the normal cool ocean current, which flows from the Antarctic, heats up. This happens around Christmas time (El Nino means Christ Child). When the water heats up excessively, they know they are in for a bad time. It means floods and high winds and changes in the marine and bird life which bring chaos to these countries.



(1) High pressure systems in the vicinity of Tahiti; (2) low pressure systems over Indonesia; (3) winds blow from east to west (trade winds); (4) the sea is calm with an east to west current.



(1) Low pressure system moves east; (2) winds become westerly and increase in strength; (3) sea becomes rough and the current may reverse; (4) less cold water return in deep layer. Result: drought in Australia, flooding in the Americas, hurricanes in the eastern Pacific.

The phenomenon occurs to a minor degree every few years, but this year it was a whopper. Water temperatures rose as much as 14°. The normal weather pattern (Diagram 1) shows an anti-cyclonic (high pressure) system situated in the vicinity of French Polynesia (Tahiti). The cyclonic (low pressure) system centres over Indonesia.

In the Southern Hemisphere a low pressure system causes the wind to blow in a clockwise direction about the centre of the low. In a high pressure system the direction is anti-clockwise (the reverse is true in the Northern Hemisphere).

So, normally in the eastern Pacific below the Equator, the winds, under the influence of the high, blow moderately from the east, taking the surface water from east to west, producing a helpful current.

During El Nino (Diagram 2) the low pressure system moves from Indonesia towards Tahiti and, as with most low pressure systems, the weather deteriorates. The wind strengthens and tropical storms and cyclones can develop much further eastward.

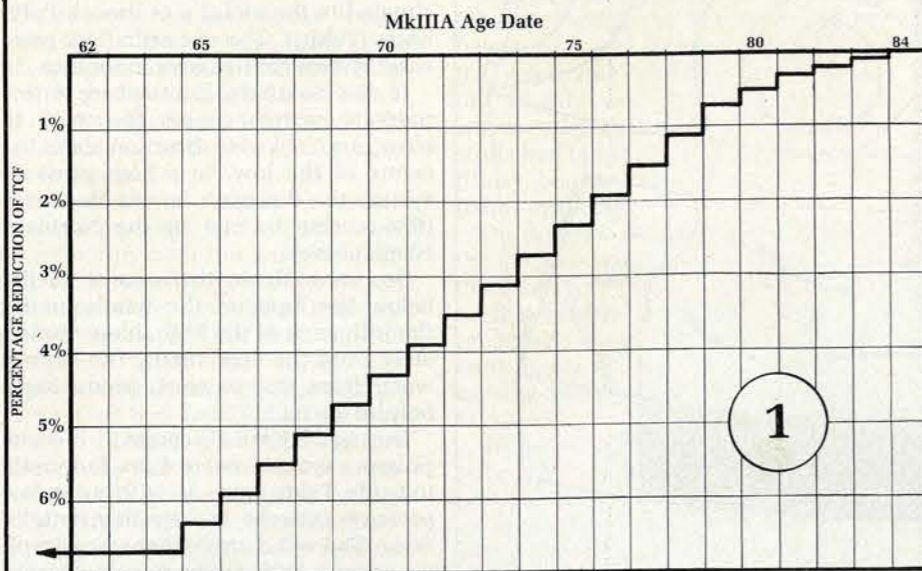
In our voyage we were under the influence of a weak high pressure system from the Galapagos Islands to the Marquesas. The normal trade winds were nonexistent and we had no helpful current.

Between the Marquesas and Tahiti the centre of a strong cyclonic depression developed to the southwest of our position so we experienced strong winds from the west and then north-west as the centre moved away. It is said that, in a low pressure system, if you face the wind your left hand indicates the centre of the low.

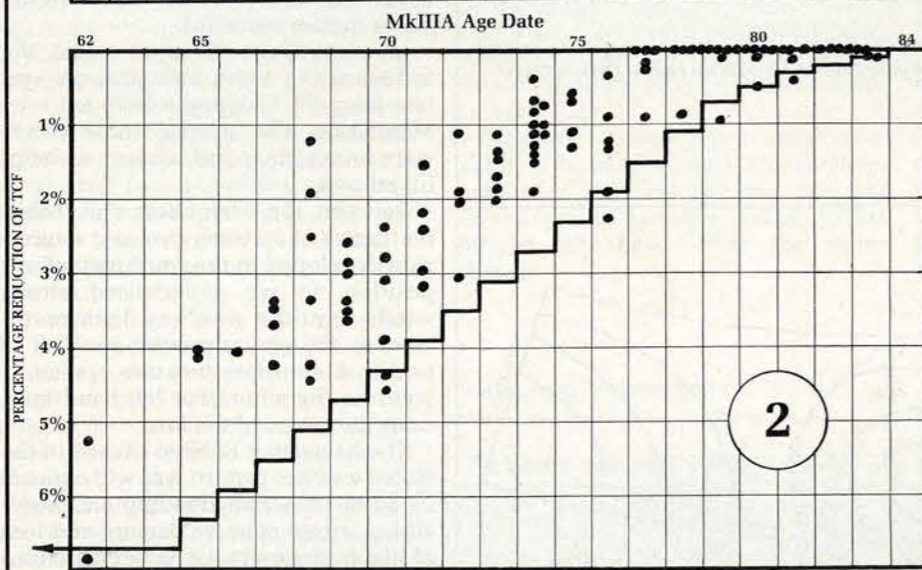
The havoc that El Nino caused in the global weather pattern was widespread. In South America flooding and landslides caused massive damage and loss of life. In Australia we had experienced a drought of mammoth proportions and it culminated in the Ash Wednesday bushfires affecting Victoria. In French Polynesia many of the villages were flattened, boats washed from their moorings. It was the worst weather they had experienced in years.

Let's hope that this weather pattern does not return for another few decades. □

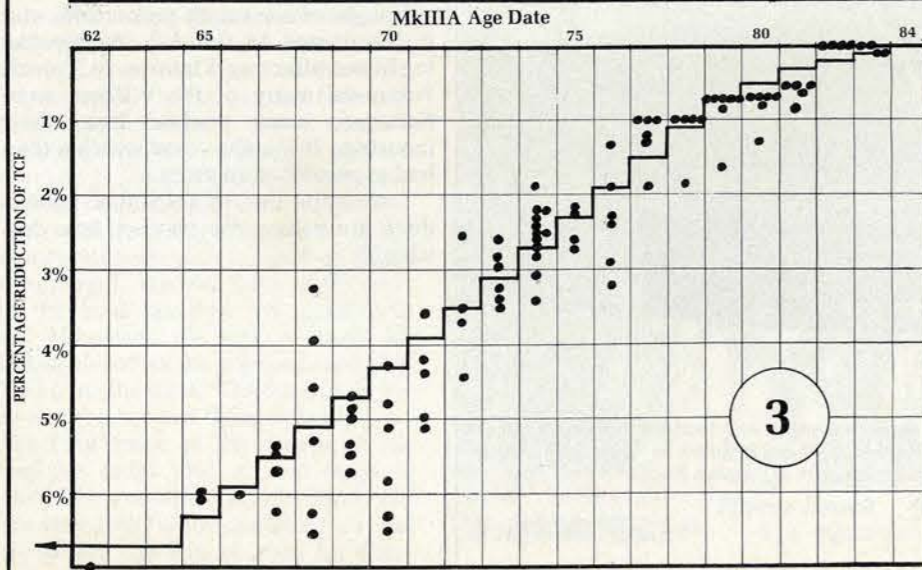
AGE ALLOWANCE FOR OFFSHORE RACING



Graph 1. Over many years of operating Age Allowance we have come to know the average level of performance fall-off with age. This has generally been .4% of TCF per year. Since 1978 however, with a more stable IOR, this has become markedly less than .4% and has probably ranged down to as low as .1% per year. This graph embodies the foregoing criteria, and shows a line which is stepped at the rate of .4% per year from 1964 (20 years back) until 1978, the years 1979 and 1980 show .2% per year steps, whilst 1981, 1982 show steps of .1% per year. If we accept these steps as the yearly performance fall-offs then it becomes of vital interest to check what MkIII, within the IOR calculation, does to the original rating. This brings us to Graph 2.



Graph 2 shows the percentage drop from MkIII to MkIII A, and 100 yachts were selected at random from our last Sydney-Hobart fleet for analysis. Each yacht's MkIII rating was compared with its MkIII A and the percentage difference was calculated and plotted. The previous line of annual steps from Graph 1 is also shown on Graph 2, and the general discrepancy can be readily seen. Almost without exception, MkIII A does not give as much TCF fall-off as was suggested on Graph 1 as desirable. In particular, the almost horizontal line of dots at zero percent from 1977 to 1983 clearly demonstrates one of the major failures of MkIII A; it is not adjusted frequently enough. (This aspect of the plot shows that as far as MkIII A is concerned, there is negligible performance difference between 1977 yachts through to 1983 yachts, yet this is patently untrue).



Graph 3. To construct this Graph the percentage differences in TCF as shown on Graph 2 have been adjusted as follows: (1) For 1982 and 1983 yachts, no reduction was applied; (2) for 1981 yachts, a TCF reduction of .5% was applied; (3) for 1980 and 1979 yachts, a TCF reduction of .75% was applied; (4) for 1978, 1977 and 1976 yachts a TCF reduction of 1.0% was applied (5) for 1975, 1974 and 1972 yachts a TCF reduction of 1.5% was applied (6) for yachts of 1971 and older, a TCF reduction of 2.0% was applied. These reductions have been applied to the MkIII A drop, and the results are plotted.

IN NEW SOUTH WALES

by Gordon Marshall

Earlier this year, in the May issue of Offshore, we published an article headed "Are we Heading for the Permanent Demise of Age Allowance?"

This article detailed why Age Allowance at the national level would be finally phased out this year. It also pointed out that future Age Allowances, if any, should be implemented on a Club or State level, since national uniformity had proven not satisfactory to all.

This article provoked interest. For a report on local clubs' views we have asked Gordon Marshall, who represented the Cruising Yacht Club of Australia at the Yachting Association of New South Wales meetings, for a resumé.

The four local clubs with an interest in Age Allowance were the Royal Sydney Yacht Squadron, the Middle Harbour Yacht Club, The Royal Prince Alfred Yacht Club, and the Cruising Yacht Club of Australia.

At a preliminary meeting of the Offshore Racing Committee of the Yachting Association of New South Wales a decision was taken that the representatives of each club should actively investigate their club's needs so that the next meeting could decide whether concerted action was desirable.

At the subsequent CYCA Sailing Committee meetings two very distinct, strong views emerged. One was that, in the interest of improved international performance, no Age Allowance should be used. This was, predictably, the view of committeemen who chose to represent new boat owners. The other strongly proclaimed view was that Age Allowance should be used so that our fleet of older yachts would be encouraged to continue racing.

Much discussion on several occasions ensued, and it soon became clear that the twain would never meet. Finally, formal voting procedures were resorted to. (This is not usually necessary for decision taking within our Sail-

ing Committee). The result was an impasse, with the voting for each group even. It was obvious that a Chairman's casting vote would swing the result in favour of no Age Allowance. At this point the maturity of the Committee was demonstrated.

The Committee members freely agreed that a solution by casting vote was not the way to go with such an important subject so clearly and evenly divided, and thus a compromise was sought. The result was published in our latest Sailing Program and Special Regulations.

Our Short Ocean Point Score (the Saturday afternoon triangles) would be calculated using "a Suitable Age Allowance incorporated in the TCF. (The results without Age Allowance would also be exhibited in the Clubhouse so that the new boat owners could evaluate their performance according to international standards, but no point score for trophies would apply). An Arbitrary (or Club) TCF would continue to apply to individual divisional results (for those yachts without an IOR rating, or to those whose design was not intended for IOR competition).

On the other hand our Long Ocean Point Score results (for the Blue Water Trophy) would be calculated using TCFs without Age Allowance. A concurrent point score would be introduced (called the 'Illingworth Trophy') and this would embody Age Allowance. A touchy point, the Sydney-Hobart Race, was not able to be compromised, and, as part of the Blue Water Point Score, was to be conducted without Age Allowance.

It then only remained to settle on the suitable Age Allowance formula, and this was left to the writer to develop, and, if possible, to have accepted by the other Clubs, though it was clearly agreed that, if necessary, we should go it alone.

The writer developed the formula (the details and logic are covered later) and took it, together with the Cruising Yacht Club of Australia's intentions for the forthcoming season, to the next

Yachting Association of New South Wales' meeting.

This meeting was unanimous in the view that each Club desired Age Allowance for next season's competition and enthusiastically accepted the proposed formula without any suggestion of modification. The Yachting Association of New South Wales has since issued a recommendation that in the State of New South Wales, if Age Allowance is to be used, it should be in accordance with the formula as accepted at the Meeting.

The Australian Yachting Federation was also informed of the Yachting Association's recommendation, and it has since distributed the recommendation to Interstate Associations.

Graphs 1-3 shows the effect of the Age Allowance formula which we have adopted for the 1984-85 season and which is enthusiastically adopted by the other three Clubs in our immediate area. It remains to be seen whether any interstate club adopts a similar formula.

In the meantime at the CYCA, since both short and long ocean races will be calculated with and without Age Allowance, we will be able to monitor whether the chosen allowance is suitable, and will be in a better position next year to make such modifications as seem necessary. There is the possibility, of course, that the ITC may make a change to the MkIII A formula this year, and in that event, the whole comparison procedure will need to be repeated. □

STAR-WARS SAILS

By Bob Fraser

WHEN CHOOSING a fabric most suitable for racing sails, a number of considerations must be made including: Fabric weight, cloth stretch characteristics, tear strength, general longevity, cost and the construction design of the sail.

Commonly to be found in sailmakers' quotes are Mylar, Kevlar, Yarn Tempered, Duroperm and Dacron (trade names for a variety of sail fabrics). Most yachtsmen are reasonably familiar with the broad character of these fabrics. However, a quick assumption that the best fabric is the lightest, with lowest stretch, highest tear strength; has to last for ages and cost very little would be quite wrong. Firstly, no single fabric would fit all those requirements and secondly, in some instances, it should not.

Consideration must be given to choosing the lightest fabric suitable for the after close attention by the sailmaker to the wind range the sail shall be used in, aspect ratio and area of sail, and displacement of yacht. Stretch ratio test graphs, tear strength tests, and, with Mylar laminates, peel strength tests, are normally available to the sailmaker, which should help him in this choice.

We apply a number of formulae to the stretch ratio graphs to help select the correct fabric for a given sail and wind range. A comparison of fill strengths on headsail fabrics for most No. 1 and 2 single-ply genoas is shown in Table 1. However, it should be emphasised this is not the complete answer, as comparisons should be made of the bias stretch behaviour, which is the indicator of how full the sail will become under varying loads. Too much bias stretch means the sail may permanently "grow". However, this is best covered in the area of sail construction design.

Generally, the firmer the fabric, the lower the tear strength. However, a sensible approach by the sailmaker and yacht owner in guarding against sharp

BOB FRASER is head of the Fraser Sails group of lofts.



New Queensland Farr 40, The Gambler sports twin-ply Mylar headsail and composite Kevlar/Mylar main. Mike Power pic.

objects protruding on the yacht and rigging, and adequate spreader and stanchion patches on the sails, should almost eliminate this problem.

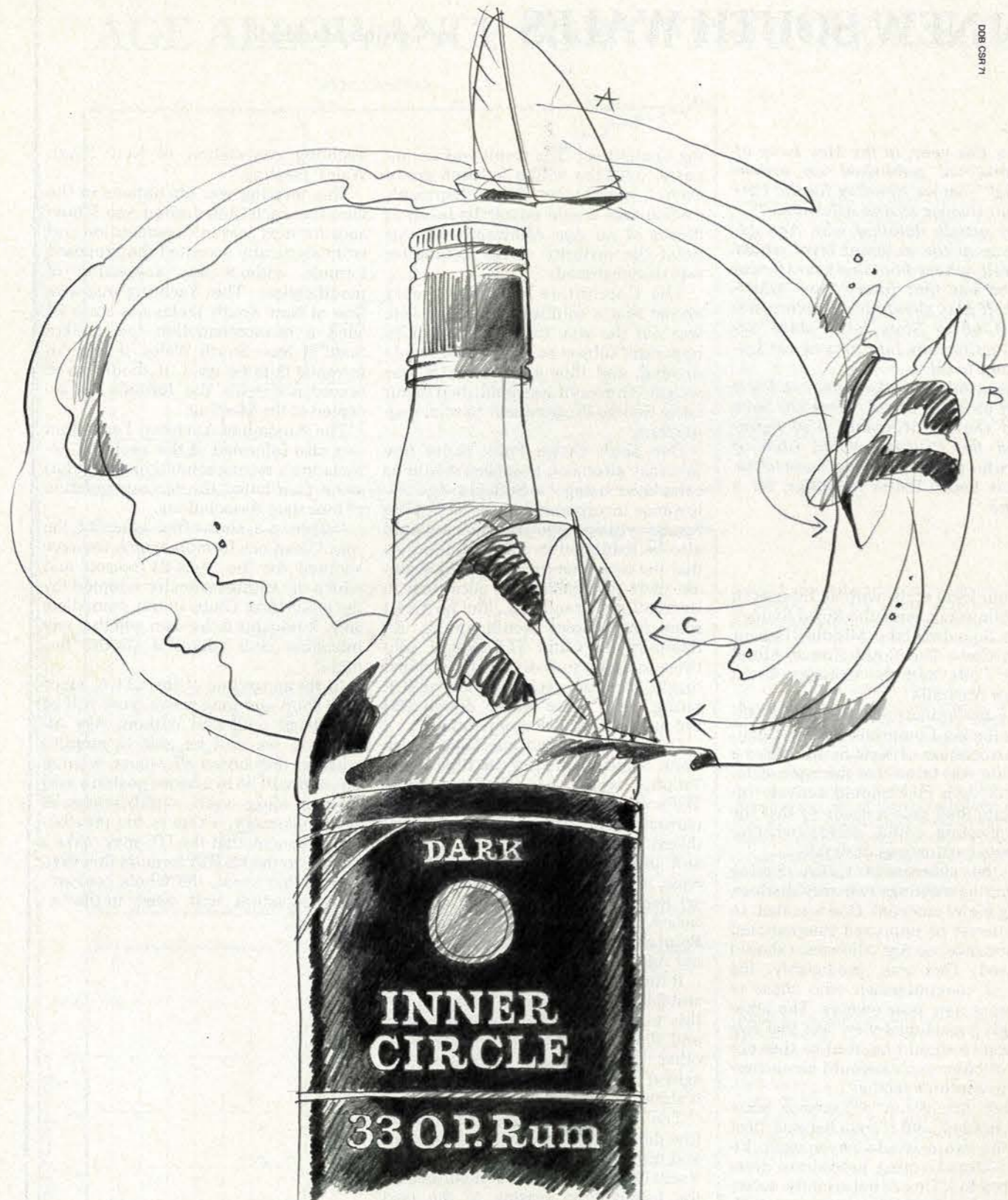
Before taking a closer look at the stretch ratios of these fabrics, which are essential criteria in understanding the real advantages to be gained in fabric choices, it is necessary to understand their composition and nature.

Polyester woven fabric. Normally referred to as Dacron, or Terylene, Dacron being Dupont's brand of polyester yarn, Terylene, that of ICI. Polyester-woven fabrics have been the traditional fabrics used for working sails over the past 20 or so years. They are woven on a loom using yarns made from individual polyester filaments which have been spun and drawn. The drawing process orients the long chain

450° GENOA MAX WINDRANGES (RANDOM SAMPLES ONLY)		
FABRIC	1% ELONGATION	MAX WIND RANGE (KNOTS)
3.4 MYLAR	59lb	20.2
4.6 DACRON	28lb	13.9
4.9 MYLAR	82lb	23.8
5.2 DACRON	35.5lb	15.6
7.2 DACRON	42.5lb	17.14

Table 1: Comparison of fill strengths in single-ply genoas.

molecules in the direction of the filament. The fabric goes through up to 30 finishing stages before the end



Sooner or later, every rum drinker discovers the satisfaction of the Inner Circle.

Winner of more local and international medals than any other rum in the world.

Two significant structural changes have occurred over the past few years: To create an unbalanced fabric, that is significantly stronger in the fill direction. A varying degree of finished firmness to enhance bias stability.

Early woven fabrics were by and large balanced in construction; that is to say they had similar denier threads along the roll (warp) to those across the roll (weft or fill). It became apparent, firstly in mainsail applications, that a balanced fabric just was not suitable. The area of highest loads in a mainsail is in the leech area. Mainsails are constructed with the cloth at 90° to the leech, so the fill thread is running up the leech. Fabrics were developed with heavier fill threads and lighter warp threads, to give increased strength in the area of highest loads, without increasing overall cloth weight. Unfortunately, these early heavy-fill fabrics had one downfall — the unbalanced nature of the weave led to higher diagonal or bias stretch, with resultant unwanted sail fullness.

This has subsequently been overcome by a varying degree of cloth "firmness". During this process, the fabric is passed through baths using such resins as Melamine, before being heat set. Due to the controllable bias stability now achieved, these unbalanced-weave fabrics are used more and more for headsail applications, as well as mainsails.

Duoperm or yarn tempered fabrics. (hereinafter referred to as "Duoperm", but meaning either). These fabrics are the ultimate in low stretch and stability in conventional woven fabrics. Generally speaking, they have the same, or lower stretch, than comparable-weight Mylar fabrics. They should not be confused with early poor-lasting yarn-tempered fabrics. The early

fabrics of this type were not of particularly good base cloth, and relied on resins to fill the weave to gain stability.

These modern fabrics are constructed from the same weave as their softer counterparts, and their stability is enhanced by excellent lasting and durable resins. (Mylar's superiority lies in its better ability to resist flutter, and its comparative ease of handling). These fabrics are used largely on skiffs, dinghies, one-design yachts such as Etchells and Dragons, but have a particularly good application for mainsails for both offshore yachts and harbour racers.

Mylar laminates. Much has been written over the past five years on Mylar and rightly so, as this is the area of greatest significant change in sailmaking fabrics and one that will undergo a lot more development. Some yachtsmen had some bad early experiences with Mylar laminates, such as delamination and sails torn surprisingly easily. However, rest assured, Mylar is here to stay for a long time as the ultimate in racing sail fabric for most applications. The very nature of Mylar, which is extruded polyester in sheet form whose molecular structure gives equal stretch resistance in all directions, means that sails will ultimately have a longer racing life, as they will not suffer anywhere near the permanent distortion experienced in conventional woven fabrics.

Delamination is almost a thing of the past with most brands of Mylar. Inferior early gluing methods were responsible for most of the problems here, coupled with the use of Ripstop Nylon as the substrate which is hydroscopic by nature and would retain water and lead to delamination.

The real advantage of Mylar over conventional sailcloth is its resistance to

stretch in all directions. A Mylar fabric will stretch less than half that of a comparable-weight firm-finish Dacron. The sailmaker can then choose whether to build a sail that is half the weight of its conventional counterpart for the same amount of stretch, or the same weight for twice the shape-holding ability, or something in between. Either way, the advantages are significant and the decision must be made to suit the occasion. Usually, the tendencies are to build a sail that takes advantage of both situations; that is to design and build a sail that is lighter but will retain its shape over a much higher wind range. To achieve this properly, sails are invariably kept to half the comparable Dacron weight and sometimes two-ply with similar or lighter Mylar fabrics in the high load areas.

Given that the gluing techniques have improved enormously, and accepting we have greatly improved bias stability, the next major step is to improve the substrate (woven fabric glued to the Mylar). Two important changes have taken place here: Improvement in tear strength. The development again of an unbalanced material.

In early Mylar laminates, the sole purpose of the substrate was to minimise tearing. The Mylar itself has virtually no tear resistance, however these early "tafeta" substrates were made of closely-woven fine polyester threads, which would tear easily and contribute little to stretch resistance. The latest breed of substrates consist of much heavier threads which individually are far more resistant to tearing. These are woven in a fairly open pattern, to reduce weight and have a "Ripstop" effect. These threads also contribute significantly to the fill (or warp) strength which "unbalances" the material and allows some interesting, and (mostly) favourable, construction techniques.

Kevlar/Mylar laminates. Despite current limitations on the use of Kevlar for sails on International Offshore Rule yachts, cloth manufacturers and laminators are experiencing difficulty in keeping up with the demand. The reason for this is clearly that in certain applications, Kevlar laminates are far superior to any other material available. It is rather ironic that its superiority lies in most of the areas where detractors argued it should be banned or limited, including ease of handling, questionable strength and cost.

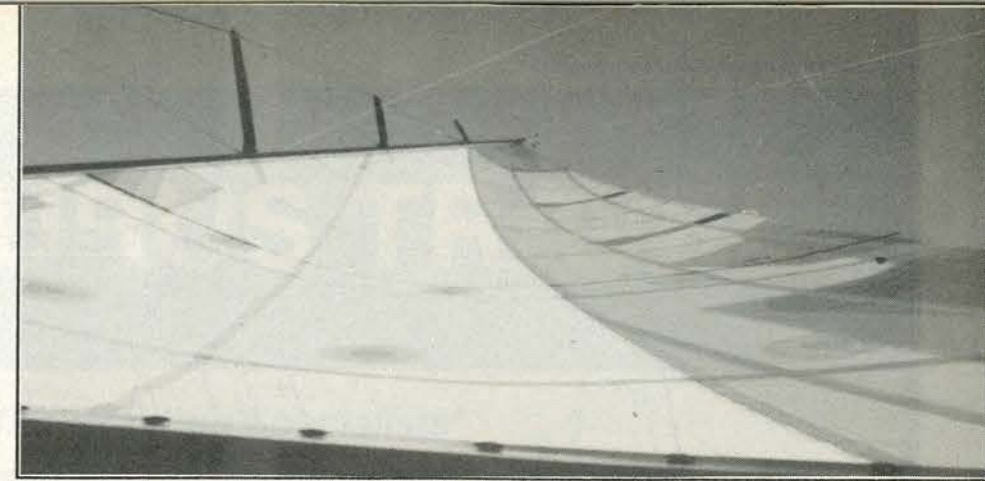
Early Kevlar materials certainly had a lot of failings and these have not all been solved. However, there is currently no fibre commercially available with the tensile strength of Kevlar that is suitable for sail material. The current laminates consist of a woven material using Kevlar threads in the fill direction (or warp when designed for vertical application) and Dacron threads at 90° to these. This "substrate" is then glued to Mylar film. The bias stability, weight for weight, is comparable to normal Dacron/Mylar laminates but it has incomparably low stretch to the direction in which the Kevlar thread is running. The currently available laminates mainly incorporate closely-woven substrates which are mostly suitable for high aspect (blade) No. 3 and 4 genoas and mainsail leeches where the vertical loadings are highest. Before the limitation rule, there were some interesting developments using open scrim Kevlar/Mylar substrates. These materials were most suitable for No. 1 and No. 2 genoas as they needed fewer Kevlar threads to surpass the fill strength of comparable Mylars and so a lighter, easier to handle, cost-effective sail could be produced. For the time being, at least, that is academic with the Offshore Racing Council banning the use of Kevlar in headsails other than No. 3s and 4s.

Construction techniques

The most simple but correct view is that the lightest fabric most suitable for the job, should be chosen. It would be easy for the sailmaker to build acceptable, shape-holding sails by going up a few weights in sail fabric. However, such sails would be harder to tack, cover a narrower wind range and add weight aloft.

The 1983 America's Cup series prompted some weird and wonderful sail constructions attempting to keep down the overall weight of the sails and align the strongest direction of the cloth in the direction of greatest stress in the sail.

It must be remembered there were



Indian Gibber's fractional mainsail is of composite construction using warp 5.4oz Kevlar/Mylar in the leech area stepping down to 4.9oz and 3.4oz Mylar in the body of the sail.

Figure 1: Mast bend flattens the sail but moves the draft aft on a fractional rig mainsail.

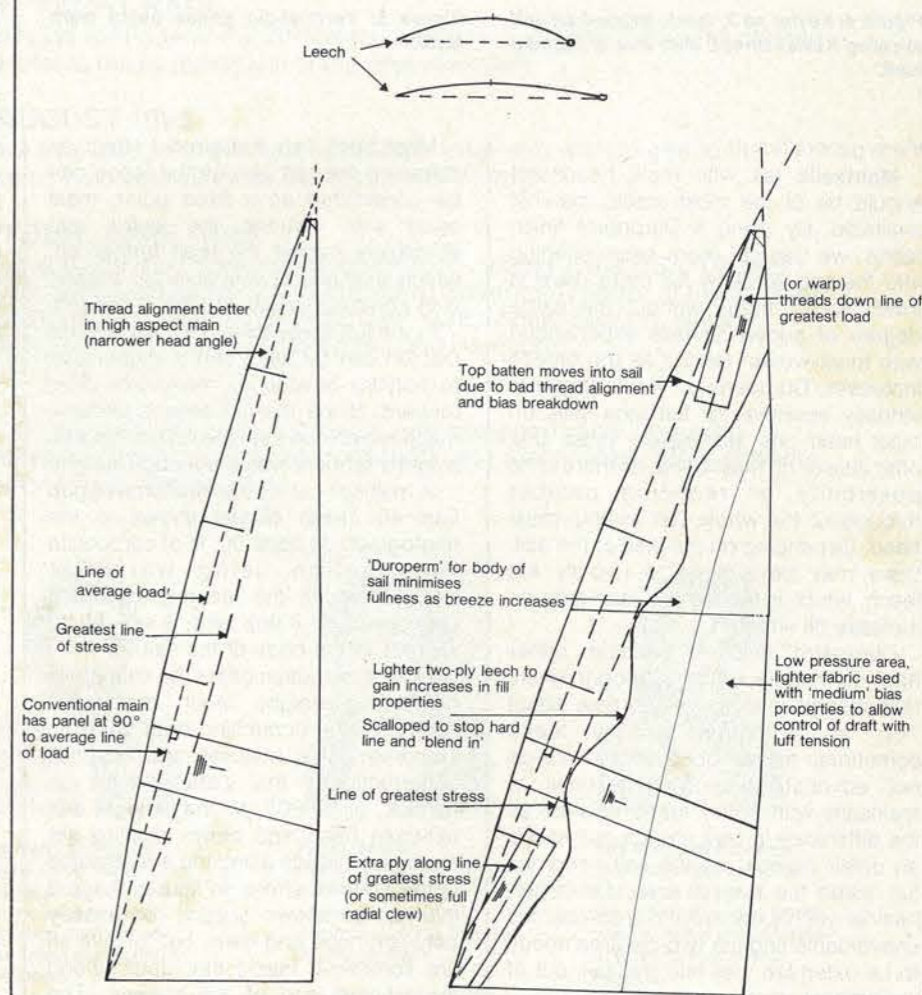


Figure 2: High-aspect mainsail.

Figure 3: Low-aspect fractional main.

virtually no budget limitations on the Twelve Metre sail race. For everyday racing, the commonsense approach is to construct the most cost-effective performance sails. Radial construction

and two-plying add considerable cost to a sail both in labour hours and additional material. Within the space of this article, we cannot cover all the requirements of an individual sail but we can look at

Table 2: Genoa fabrics stretch comparisons. Shaded areas represent bias stretch, clear areas, fill.

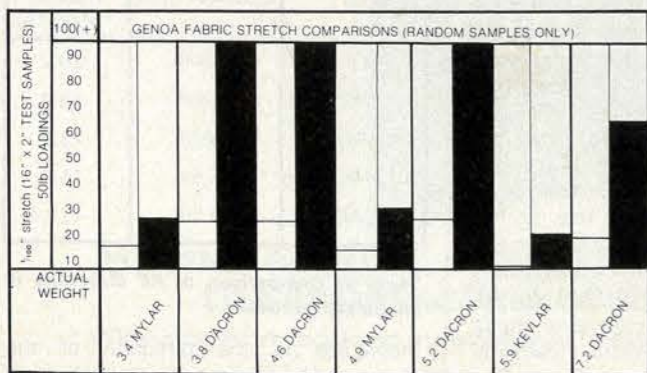
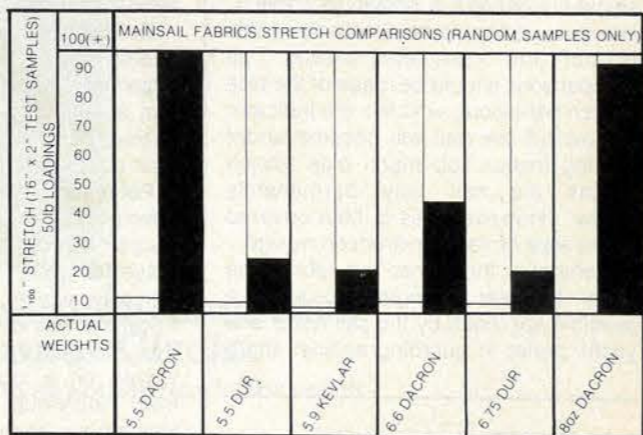


Table 3: Mainsail fabrics stretch comparisons. Shaded areas represent bias; clear areas, fill.



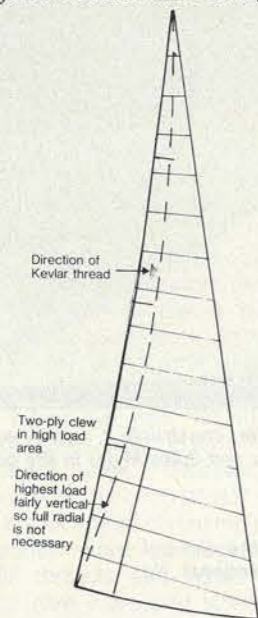


Figure 4: Kevlar no 3, fabric tripped around aligning Kevlar thread with line of highest load.

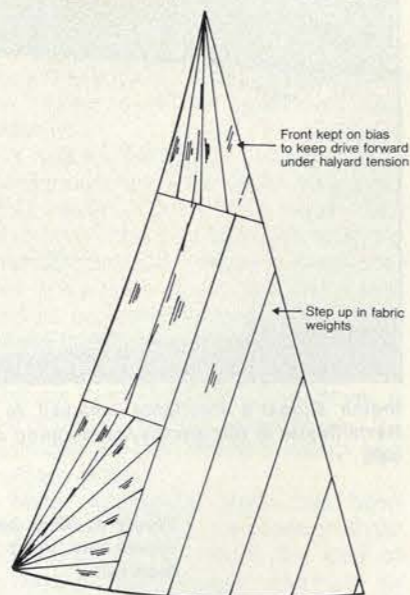


Figure 5: Vertical-cut genoa using warp Mylar.

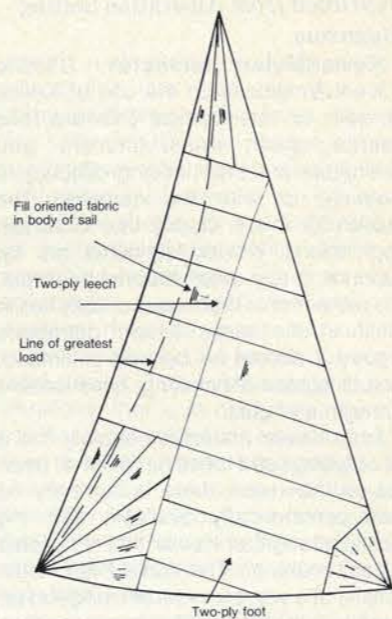


Figure 6: Crosscut sail can be a combination of two-ply leech and foot and include radial head, clew and tack from warp Mylar to distribute high corner loads into sail.

them generally:

Mainsails (as with most headsails) should be of the most stable material available. By using a Duroperm finish fabric, we can cut more seam shaping into the sail, to allow for more drive in lower wind ranges without the same degree of added fullness experienced with most woven fabrics as the breeze increases. Duroperm, or Kevlar/Mylar is virtually essential for full race sails on mast head rigs, particularly those that offer little or no mast bend, as there is no possibility of reducing camber throughout the whole sail without mast bend. Depending on the size of the sail, there may be a need to two-ply the leech, which is the highest load area, to increase fill strength.

Duroperm finishes become rather hard to handle, with disproportionate tear strength in cloth weights over about 7oz, so a lighter two-ply leech sometimes makes good sense. We do not advocate two-plying leeches in mainsails with softer fabric finishes as the difference in bias stretch can cause an unfair camber as the sail becomes full inside the two-ply area. On larger, heavier yachts, two-plying is sometimes unavoidable and the two-ply area needs to be extended well into the sail, out of the highest stress area.

Mainsails on fractional-riggers generally require a slightly different approach. The body and leech area of the sail still needs to be constructed from a very stable material, to restrict unwanted increase in draft, so Duroperm would be the best choice. But invariably, this causes problems when the mast is bent excessively.

Mast bend has a dramatic effect on flattening the sail but, as the leech can be considered as a fixed point, mast bend also flattens the entry and effectively moves the draft further aft, which is usually undesirable. So a fabric with *controllable* bias stretch is needed.

In the luff area, a firm to medium-firm Dacron can be used that is responsive to halyard tension to move the drive forward. Since the luff area is under a much lower load than the rest of the sail, a lighter fabric is used to reduce weight.

A mainsail cut for the fractional-rigged Farr 40 *Indian Gibber* shown in the photograph on page 00, is of composite construction using warp 5.4 Kevlar/Mylar in the leech area and a step-down of 4.9oz and 3.4oz Mylar weights in the body of the sail.

This construction offers the ultimate in minimising weight, leech and body stretch and in controlling draft position. In conventional mainsail and headsail constructions, the panels are run parallel, or at 90°, to the straight line between head and clew, aligning the strongest threads along the *average* line of the greatest stress. In figures 2 and 3 this line as shown doesn't run exactly between head and clew, but follows an arc somewhat inside the roach, along the inboard end of the battens. The mainsail shown is constructed with the panels in the leech tripped around so the Kevlar threads follow along this line.

It can be seen in diagrams 2 and 3 that conventional thread alignment is not too bad in the middle leech area, but suffers to varying degrees in the head and clew areas. This problem becomes worse with a low-aspect sail, due to the

wider head and clew angles. This can usually be remedied effectively by two-plying an extra layer with the thread lines running directly from head to the inboard end of the top batten and clew to inboard end of bottom batten. This works particularly well using Duroperm fabric, but a softer cloth may need a full radial clew and head.

Headsails: Mylar-Dacron laminates offer the ultimate in stability and durability for overlapping genoas. Careful selection of material will enable a sail to be constructed that is considerably lighter than its Dacron counterpart, but enabling it to be carried in a much higher wind range. Due to their woven construction, conventional Dacron sails become considerably fuller under increased load. This situation is not helped by the increase in forestay sag which increases the draft in the sail. Obviously, forestay sag is not going to be reduced using a Mylar sail, but the reduction in stretch is a step in the right direction.

Differences in bias and fill stretch vary considerably with various brands and weights of fabric. The sailmaker can apply some fairly simple formulae to the stretch graphs to determine the weight of materials and sail construction to be used. For example, a single-ply Mylar sail could well have the bias and fill strengths required without the additional expense and added weight of two-plying the leech or foot. On other sails, two-plying may be necessary to increase fill strength or radial clews and heads used to decrease bias stretch.

(continued on page 29)



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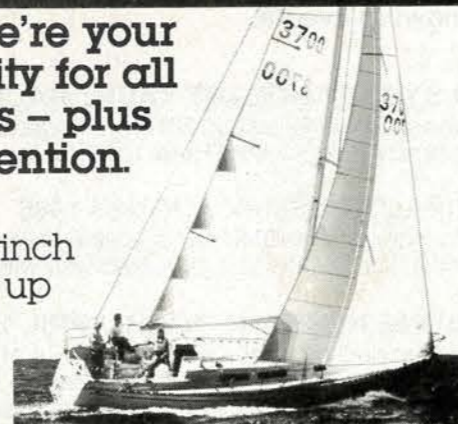
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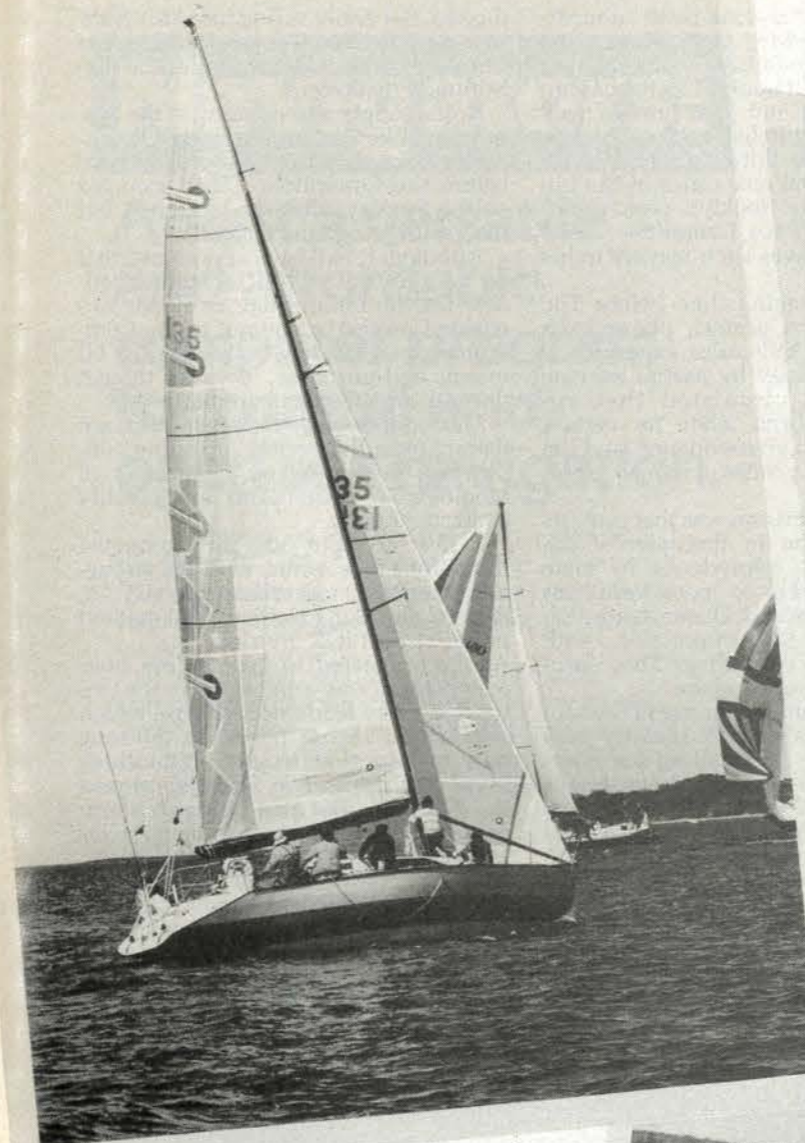
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SCOR '84

by Mike Power



SCOR series winner, The Gambler, Ian Kenny's new Farr 40, nearing the weather mark in Olympic triangle race.



Phil Atkinson's new strip-plank, non-rating 4-footer Hot Tub, beating to Caloundra in race 2.

For the second year running, controversy brewed over at the Sunshine Coast Offshore Racing (SCOR) series conducted in mid-August by Mooloolaba Yacht Club and sponsored by Medley Ford. Out on the course, the sunshine was as unstinting as the regatta's title suggests; in the clubhouse, after race three, the mood and mutterings of some IOR competitors grew progressively darker.

The aggravation stemmed from three separate protests, one of which could have had a bearing on the outcome of the series.

After races one and two, Brisbane yachtsman Ian Kenny's new Farr 40, *The Gambler* held the pointscore lead. In the lively 20-plus knots southwesterly of the first 26 mile event, *The Gambler* narrowly won on corrected time (146.52) from *Di Hard* (146.97). In the next race, about 45 miles, *The Gambler* won again from the Royal Prince Alfred Yacht Club half-tonner of Jamie

MacPhail, *Highway Patrol* (last year's SCOR champion). *Di Hard* filled fourth place and lay 6.12 points behind *The gambler* 0.3 the pointscore.

Then came race three, an Olympic triangle course of about 26 miles. The remnants of the keen southwester, which had stayed in since the start of the series, were still huffing at 15-18 knots for the start.

Only minutes before the gun, the 50-footer *Madame De Farge* of Tom Stephenson and 'Ferdie' Leschkau sailed up the line on port and came on to a collision course with Phil Atkinson's new 41 footer *Hot Tub* on starboard. Warning shouts erupted from other nearby boats and the two yachts altered course but made a sideswiping contact. Apollo's sailing master, Greg Gilliam, saw

the incident and, when neither boat flew a protest flag, he decided to lodge an official charge. Protest one.

Nearing the first weather mark, *The Gambler* and *Di Hard* were close together on port with *The Gambler* slightly ahead to leeward. *The Gambler* then altered course but, after a yell from *Di Hard*, both yachts continued on port tack. On the CYC Farr 37 *Leading Edge*, Sydney sparmaker Mark Peelgrane observed the incident and urged *The Gambler* to perform a 720. Subsequently, both *Di Hard* and *Leading Edge* broke out flag Bravo. Protest two.

Later in the race, the breeze faded and, on the second reach to the wing buoy, it backed, forcing the leaders to drop their spinnakers and work to the mark. In close quarters tacking near the mark, a collision occurred between the maxi *Apollo* and the 54-footer *Apollo III*. Protest three.

After the race, a protest hearing was at first scheduled for that evening (Wednesday). Finally, Mooloolaba Yacht Club Commodore Bob Robertson announced that *Di Hard's* protest (against *The Gambler* for allegedly tacking in *Di Hard's* water) would be heard at 11.00 a.m. Friday, six hours before the start of the 200mile final race.

If that decision raised eyebrows, his announcement that the other two protests had been rejected caused a real ruffling of feathers; *Apollo's* protests had not been received within the specified time (two hours) of her finishing. Because of her exceptional draft and the prevailing tides, *Apollo* was unable

to return to her marina berth immediately after finishing each of the first three races, remaining offshore for up to two and a half hours. The Race Committee pointed out that owner Jack Rooklyn had 'hitched' an early ride ashore after the third race and could have notified the race office of the impending protests. Rooklyn, perhaps unknown to the Race Committee, however, always leaves such matters to his sailing master.

In the intervening time before *The Gambler/Di Hard* protest, phone calls were made to AYF rules expert Tony Mooney in Sydney by parties seeking advice; word circulated that approaches had been made for certain witnesses not to give evidence, and the upshot became a cause of much conjecture.

A strong impression was that protests were uncommon in that part of the world - indeed, were viewed by some as something akin to 'poor form'. Inquiry among several Queensland sailors confirmed that impression, with Bob Robertson conceding 'They (protests) are fairly rare up here.'

Di Hard was under charter to Graham Savage and Brisbane TV identity John Barton, but the pair calling the shots were Peter Hollis and Ken Down. Hollis mounted the *Di Hard* case on the Friday, calling three other witnesses and presenting several supporting statements. Most of the afternoon had slipped away, and many of the yachts had moved out for the start of the last race, before the Protest Committee issued its finding: the protest was dis-

missed, the panel ruling that 38.1 (luffing rights) applied and that *The Gambler* had not tacked under the definition of that term.

Hollis sought a re-opening of the protest for Mike Easton (*Madmen's Woodyard*) to amplify his written statement before the Committee. (This occurred on the Sunday, after the long race, but the finding stood unchanged).

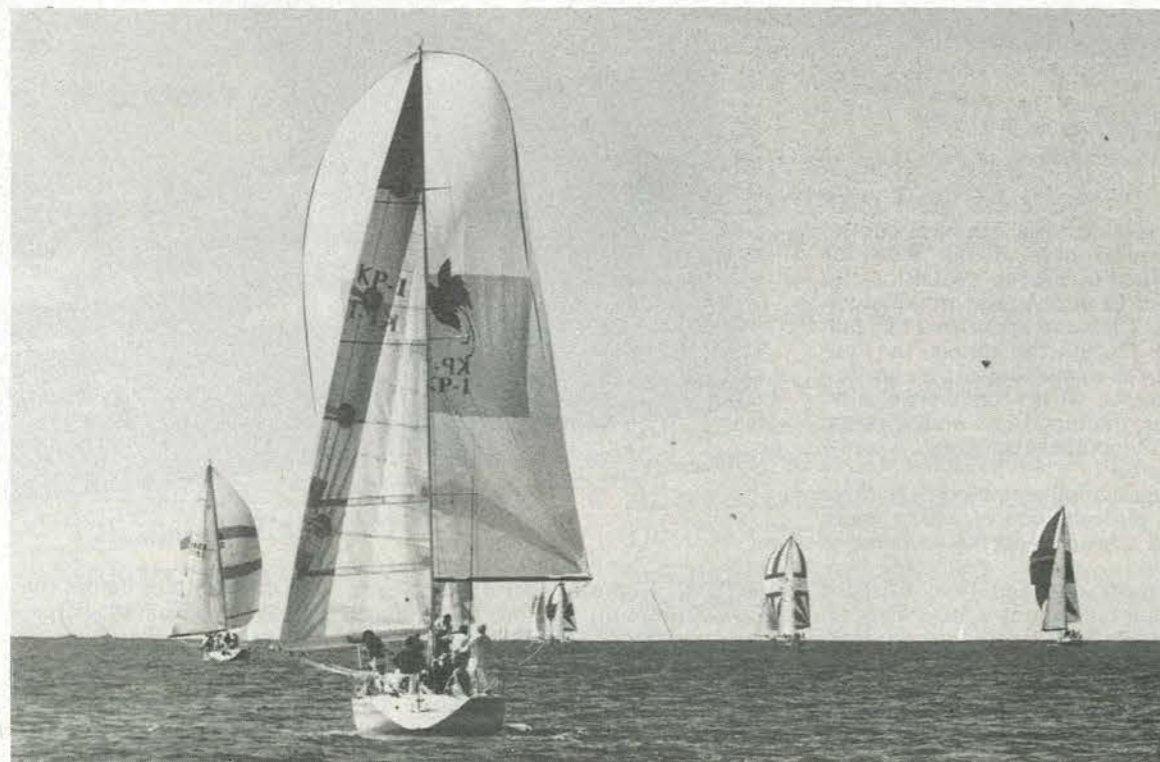
Although it had been announced that an opportunity would be made available for the circumstances of the two rejected protests to be put to the Committee, this did not eventuate. To all intents and purposes, it was as though the two collisions had not happened.

The controversy, however, did not detract from the variety of sailing conditions, the customary hospitality of Mooloolaba Yacht Club and keenly contested racing.

A fleet of about 50 yachts competed in the four-race series, with the strongest interstate representation (CYCA, RPAYC and Coffs Harbour YC) evident in the 23-boat IOR division.

Apollo, expected to secure line honours overall, was well beaten in the two short races by *Madame De Farge*, which also scored higher points in the long race to win that trophy. With three firsts and a 6th, *The Gambler* proved top IOR boat. The best of the southern contenders were the half-tonners, *Highway Patrol* (2nd overall) and *Public Nuisance* (4th); Gunter Heuchmer's *Leading Edge* finished 7th overall.

Cliff Schofield's *Leggero* topped the Arbitrary pointscore and Noel Leigh-Smith's brand new *Desperado* had a comfortable win in JOG. □



Di Hard chases fleet leaders in dying airs of race 3. She subsequently was involved in a vigorous protest against *The Gambler*.

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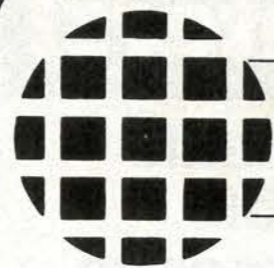
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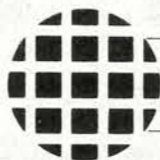
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DESIGN FORUM

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Andrew Cape

Andrew Cape is well known to CYCA Members a forward hand on Peter Kurt's *Once More Dear Friends*. He is currently completing a course in naval architecture at the University of NSW. Through his involvement with the Dubois designed *OMDF*, Cape worked in the UK at the designer's office after the last Admiral's Cup. This experience has led to his being commissioned to undertake rating analysis projects for the well known IOR racers *Black Magic*, *Bondi Tram*, *Jade*, *OMDF*, *Police Car* and *Shockwave*. Recently he was appointed Team Rating Advisor to the Australian Clipper Cup Team.

Cape is currently working with Andrew Buckland in the design, structure and engineering details for this year's new breed of 18' skiffs.

Listed below are statistics taken from the top three Class E yachts at this year's SORC which we have used for comparison with Cape's design, *Dazzler* being a masthead rig and *Allegiance* and *Diva* both having fractional rigs.

Boat	Designer	L	B	Draft	GD	I-J	P-E	D-F	SHR	RMC	Dspl	Rating
Aciton	A. Cape	33.25	12.26	7.39	2.34	52.07	45.96	1.0067	15.7782	1039	12857	30.5
Allegiance	Andrews	32.34	11.99	7.69	1.45	48.05	52.60	1.0033	15.9235	1184	13005	30.4
Diva	Joubert/Nivelt	33.37	12.17	6.90	2.48	48.20	51.15	1.0065	15.6233	1017	12890	30.4
Dazzler	Johnstone	34.20	12.34	7.44	0.83	53.26	45.73	1.0009	15.2788	1126	15395	30.3

:Note: All measures are imperial.

The Designer Comments

This design is intended for the new One Ton Level Rating of 30.5' to which the next world titles (in England after the 1985 Admiral's Cup) are to be sailed. The current IOR rule places certain restrictions on the main parameters of length, displacement, sail area, draft and stability, so a careful study must be made to find the optimum performance for given conditions.

I have chosen a masthead rig for this design to suit the prevailing moderate conditions experienced in the UK at this time of year, with the added benefit of improved acceleration in close-quarter tidal sailing conditions.

The hull shape emphasises fair lines with low wetted surface, producing an easily driven yacht. An analysis of the frequency of hard running conditions had led me to slightly reduce the currently popular emphasis on this aspect

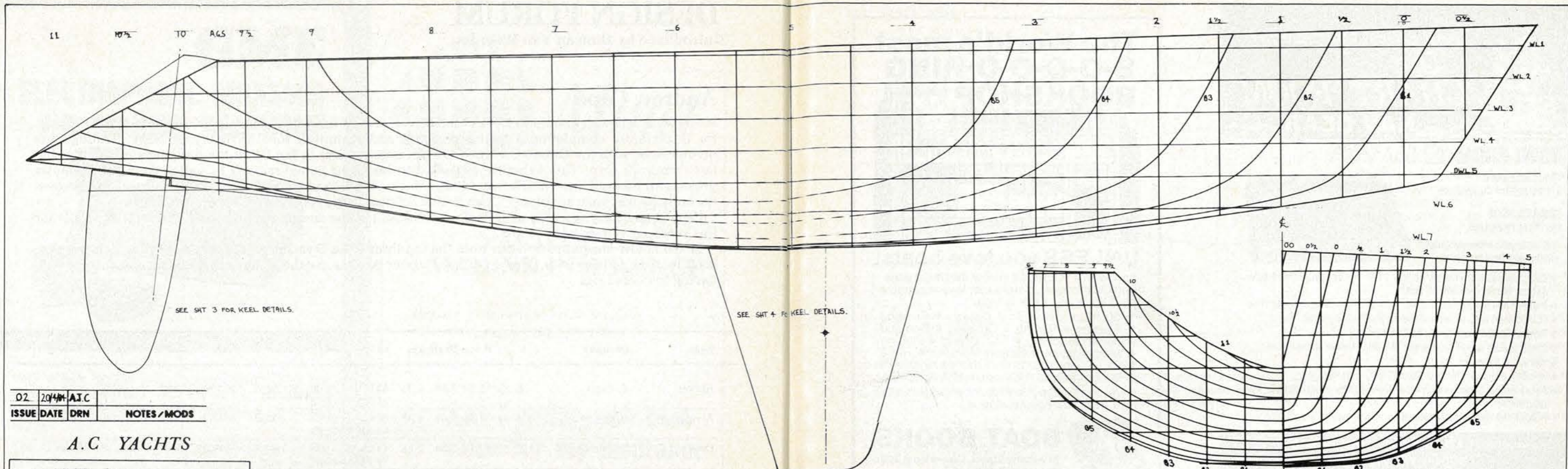
of performance. This has led to reduced wetted surface, while keeping a shallow after girth profile to minimise wave making. The rated displacement of 5830 kg (12,857 lbs) is moderate for this size of yacht, although is rather on the lighter side, considering the masthead rig.

Considerable attention has been paid to structural detail to ensure a rigid yet light hull with minimal use of expensive exotics. The hull features full length longitudinals which incorporate the cockpit sides, cabin sides and bunk facings. The resulting fore and aft rigidity is complemented by the balsa core deck which breaks new ground by using various grain orientations to resist compression loads. The face laminates of the deck are transverse 3 mm veneers of King William pine, with 6 oz balance weave S-glass and epoxy on the

deck face. The balsa core is used in end grain configuration under fittings, with double thickness pine faces under the winches. The remainder of the deck core is long grain balsa aligned fore and aft.

The hull skin is variable thickness and variable density Divinycell with Kevlar, S-glass and epoxy sheathing. The variations in density and thickness allow for reduced end weights to lower pitching moments, as well as varying framing to suit the static and dynamic load patterns of the particular region.

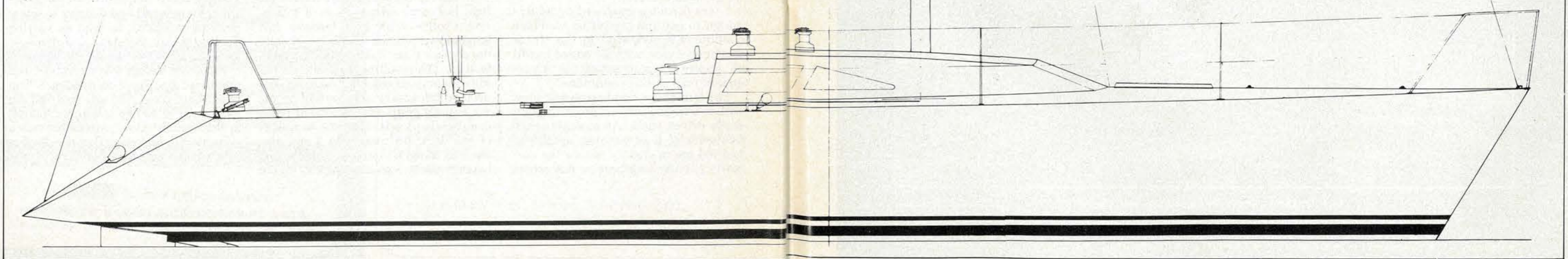
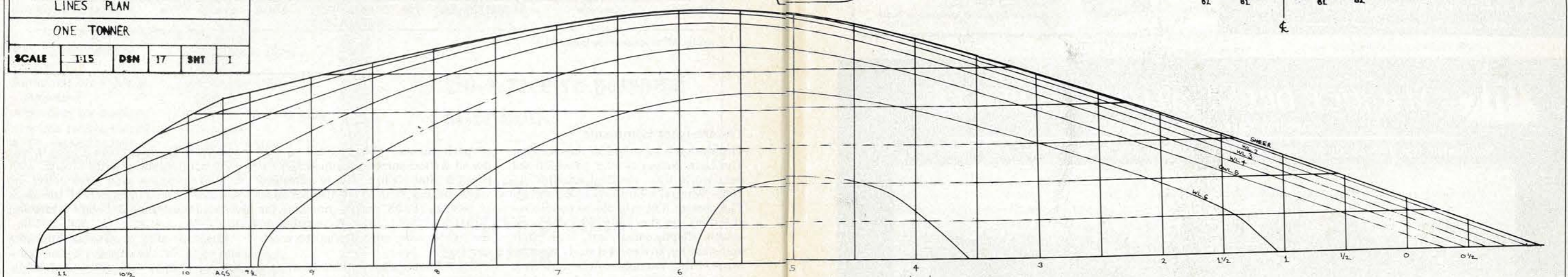
While the design was conceived and optimised for One Ton/Admiral's Cup conditions, a reduced sail area and the movement of 150 kg of internal ballast to the keel 'window' would provide a very strong performer for the fresher Australian conditions.▷

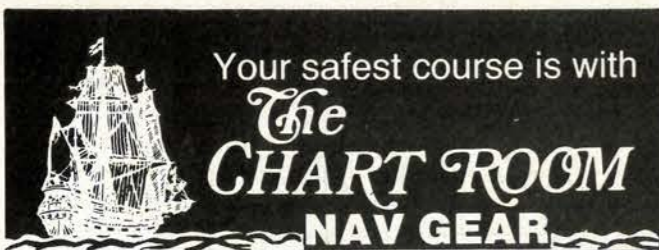


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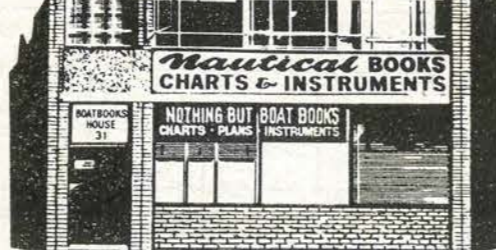
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Star-Wars sails

(continued from page 18)

Invariably a combination of these may be used for No. 1 and No. 2 genoas, as the alternative may call for a laminate that relies on a difficult-to-handle and unnecessarily heavy Mylar.

As with mainsails, headsails are usually constructed with the thread lines running parallel to the straight line between head and clew, but once again this is the *average* line of greatest stress. The real line follows an arc inside the leech, almost bisecting the head and clew angles. So, depending on aspect of sail, a radial head or clew may be used.

Another viable alternative is to trip the panels around this arc so the strongest threads are aligned more accurately with the real loads. (Figure 4).

Vertical cut headsails can be constructed using warp-oriented fabrics that allow some good construction techniques, including graduating weights from lower load areas to higher load areas (luff to leech), and full radial leeches. (Figure 5). Conventional vertical-cut headsails have offered nothing over cross-cut sails to this point, as they haven't taken advantage of real stress areas any differently to crosscut sails. If the material that is chosen to be most suitable for the job is warp-oriented, then it should be cut vertically. If it is fill-oriented then it should be cut horizontally.

Spinnakers: Most modern spinnaker fabrics are of "warp" construction, designed specifically for tri-radial spinnakers. So once again, sail construction design should align the warp threads with the greatest line of stress. Broadly speaking, the greatest area of stress radiates from the corners and diminishes fairly rapidly towards the centre of the sail, so conventional tri-radial spinnaker construction aligns the threads well.

Some sails have been made continuing the head radials down to meet the tri-radial bottom panels, thus eliminating the cross panels in the middle of the sail, in a further attempt to align the stronger warp threads with the greatest line of load. These radials are then sliced horizontally to add the necessary cross shaping. Obviously this is more time consuming, adding to the cost of the sail and often simply not warranted as the cross panels in question are more evenly loaded.

However if the added expense is accepted, we should take a closer look at the loads involved. As in headsails and mainsails, the line of greater load runs in an arc, well inside the luffs from

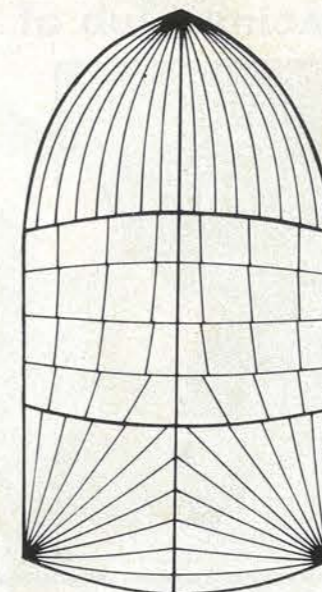


Figure 7: Spinnaker construction using warp threads vertically in an arc along line of greatest load.

ad to clew, and not along the luffs. Bearing this in mind a spinnaker can be constructed using the warp threads vertically, tripping them in an arc along the lines of greatest load, through the centre of the sail to form a smooth transition from the clew radials to the head radials. (Figure 7).

The future. Some attempts have been made to construct "self-flattening" headsails using graded fabrics and varying cloth orientation. However, I don't expect this to lead to much. The general idea is to use heavier panels where less stretch is required and lighter where it is encouraged, for example in the mid area so the leech opens and flattens the sections under increased load. In some ways this is achieved already, through normal leech twist.

In the near future, if we concentrate further efforts on *maintaining* shape, we are doing well. The greater advances are mainly going to be in fabrics. Currently both Howe and Bainbridge and Dimension, two of the largest suppliers of fabric, are working at a furious rate developing about 30-40 new lines. Δ



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BEAM ENDS

by Robin Copeland

Match racing at the CYCA

Unlike most good ideas that start at the bar with the first 'shout', then mature with volubility during the evening's imbibing, this one didn't end the night with a whimper.

The idea of CYCA match racing emanated from a discussion between Gary Linacre, Graeme Freeman, Richard Hayes and Bob Fraser. These four drafted a proposal which was submitted to the Sailing Committee, which backed the project.

Gary Linacre, several times Australian Laser, Etchells and IOR representative, renaissance Victorian yachting administrator and a member of the Sailing Committee, explained: "The concept

was to run a prototype series to start a learning curve on how exactly match racing could become a regular CYCA activity. The main criterion was that the activity should not become a benefit for the 'heavies' but should be available to all keen members to have a go, learn and improve the skills required for this type of yacht racing, which is certainly underdeveloped in Australia."

The racing is conducted over a short (approximately 3 mile), windward-lee-ward, Congressional Cup style course off Rushcutters Bay, and the crews, male and female ("to show that match racing is a non-chauvinistic activity"), have been made up from enthusiastic CYCA sailors.

The first set of races was won by Hugo Von Kretchmar with Bob Fraser second. Greg Halls was the next victor in a very close encounter with John Messenger. In very windy conditions Bob Ross crossed the line first in the third set. Fickle winds saw the final set postponed; this was eventually won by Steve Kulmar over Fraser Johnson.

A three-way inseparable tie (did anyone try a bucket of water?) involving a full day's sailing saw Von Kretchmar eliminated leaving Ross, Kulmar and Halls to fight it out in September/October.

"Boats to race in are a major problem," Linacre continued. "We are very grateful to Dicky Hayes, Bob Ross/Bob Scrivenor" (should the next boat be called 'Florin' or 'Two-Bob?') "John Messenger, Peter Hankin, Greg Halls and Pacific Sailing School who have made boats available to conduct the racing.

"The question of boat availability, sponsorship, etc., are to be tackled by the Committee after the current series, and hopefully we will be able to develop match racing as a rewarding activity on a permanent basis."

Thanks, Gary said, "must go to our Race Officials and the regular crew of Offshore, who have been a great help in allowing us to commence this programme."

□ □ □

QLD annual rum tasting

She sells sea shells on the sea shore (try saying that after umpteen rums) should have been the test before collecting the keys to go home from the CYCA one evening a couple of months ago, and there were some who didn't.

More than ninety tasters sampled a dozen delights from each of ten different distilleries at the recent rum tasting organised by the QLD Committee to raise funds for the Royal Blind (Blind?) Society and Penta Base [now Penta Comstat].

Included among the exhibitors were, if I remember rightly (and I hope no one has been left out), Mount Gay (the first to finish) and, not in order of disappearance, Inner Circle OP/UP, Frigate OP/UP, Capstan, Bundaberg OP/UP/Liqueur/Royal, Coruba, Bacardi Light/Gold, Redmill, Lambs, Beenleigh. One can only be thankful that Bruce Tyrell doesn't grow sugar cane, and that this is the last thyme I write copy on a typewriter with too many eshesh (or is that Reschs?). □

Photographs by Robin Copeland

There's nothing shadey about Mothballs during his reign as auctioneer at the Annual QLD Rum Tasting.



Auctioneer Mothballs seeks advice prior to making enormous amount of money selling umbrellas for the Royal Blind Society.



The Beenleigh Stand - Jerry Newton and Bob the barman seek a few tips.

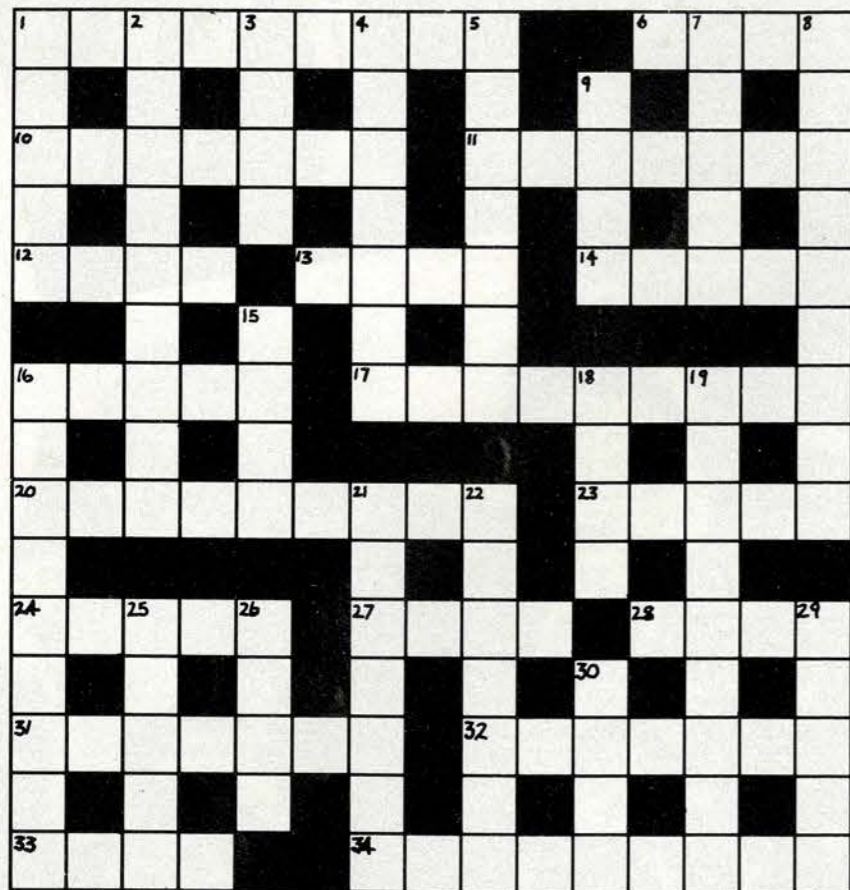


Exhausted rum taster feigns tiredness while testing the pile of the Coaster's Retreat carpet.

CAPTAIN SEAWEED'S NAUTIWORDS by John Hawley

We must apologise for the shambles we made of Captain Seaweed's Nautiwords in the last issue. After several irate phone calls from frustrated crossword experts, it became clear that something had well and truly come unstuck; we accept full responsibility for not noticing that an extra number was included in the original puzzle (Captain Seaweed's mischievous sense of humour); the artist noticed the error and corrected it but the Editor did not, and the clues were thus impervious to even the likes of Jenny May and Nick Ryan.

Herewith the corrected puzzle. The first correct entry received will win a year's free subscription to *Australian Nautical News*. Entries must be posted; 'first' entry will be judged by postmark in the event of a tie. Send your answers to The Editor, *Offshore*, 67 Beresford Rd., Rose Bay, NSW 2029. (Don't forget to include your mailing address in case you win the subscription).



- ACROSS**
1. "_____ is mine" sayeth the Lord and Dave Kellett.
 6. Nautical lockup; a ship.
 10. Any one of Sir Jim's crew in USA.
 11. Disturb mentally.
 12. Old sea dog.
 13. Added benefit.
 14. Of the city.
 16. Vanuatu's largest island.
 17. Could describe Dennis Connor after race seven.
 20. Protagonist of 16.
 23. Useful addition to the main.
 24. Nearby friendly inn.
 27. Christian name of Ashley Gay's yacht.
 28. Swedish palindrome.
 31. Highway Patrol's favourite Pacific Harbour.
 32. From whence our sea breeze.
 33. Open-mouthed stare.
 34. There may be one on your foot.

- DOWN**
1. Cook witnessed this transit in Tahiti.
 2. See Bowditch p. 68 for this limit of a chart; or, 'tidy ropes'.
 3. Able was I ere I saw this.
 4. Maybe a minus 13 across; or, to cause an expression like 33 across.
 5. Lady Jane's visitors are, frequently.
 7. Line intersecting meridians at uniform angle.
 8. One of *Helsal's* numerous names.
 9. 'Mrs' Mische.
 15. Tie up the yacht.
 16. Recent Hobart winner.
 18. That with which to hear 19 down.
 19. Favourite scream of yachties.
 21. Mast abeam removes luffing rights from this yacht.
 22. The good navigator has a new one for the return from Hobart.
 25. A partner in the first *Impetuous*.
 26. Flown by Bob Scrivenor.
 29. The back end.
 30. Mixed up Mars **Solution in next issue.**

THE GRAB BAG

A Department of Transport Safety Education Article

The contents of emergency kits provided in liferafts are always a compromise to cater for differing scenarios, available space and cost. For example, under the Uniform Shipping Laws Code for merchant ships, differences exist in the kits required to be carried by vessels on coastal voyages and on ocean voyages. These in turn both differ from the AYF regulations. The purpose of a 'grab bag' is to supplement these kits according to the needs of the likely users. It is to be 'grabbed' and taken off by survivors when a craft has to be abandoned.

Bearing in mind that the grab bag is to supplement and personalise the emergency kit, you might think that its contents should vary depending upon the area in which you are sailing, be it off Tasmania during winter, or off Darwin during summer, illustrating the range of conditions that might be considered. However, don't be surprised if differences in grab bag contents are minimal or non-existent. Look at the list of our grab bag contents and you will see that they are valid irrespective of the area:

- spectacles (if needed)
- medication (if needed)
- Survival at Sea* instruction manual
- water and solar stills
- waterproof matches and magnifying glass
- space blankets.

You may consider that the suggested list could be increased to include a number of other items which would be useful in a survival situation. However, at this stage you should check how heavy the bag is and how much, if any, room is left. Check that you will be able to lift it and transfer it to the liferaft, and consider carefully what else you may wish to include. Read the survival manual again, and again, before deciding (if you don't have a copy of *Survival at Sea - Instruction Manual*, get one for \$4.70 from an Australian Government Bookshop [or Boat Books]). The manual contains a wealth of valuable information, and though aimed at merchant ships, there are only a couple of pages which are not directly relevant to other types of craft. □

THE GREAT CHAMPAGNE YACHT RACE

SPONSORED BY
CHAMPAGNE



SYDNEY HARBOUR
Sunday 16th December, 1984

Conducted by Mr Geoff Lee

for the

Ocean Racing Club of Australia

Wanted:

Yachts, to compete in a picnic race (no extras) in Maxi, A, B, Cruising and Vintage Divisions.

Prizes (for 1st, 2nd and 3rd in each Division) will be one case of Laurent Perrier Champagne.

Hosts and Hostesses wanted to arrange groups of friends to join the yachts for this great race.

Telephone Margaret Edwards (958-131) or
Geoff Lee (267-5477)

Proceeds from the Race will be used to support the Australian Admiral's Cup and Clipper Cup Yachting Teams.

CONGRATULATIONS *BONDI TRAM* YOU DID US PROUD



The Barlow equipped *Bondi Tram* won her Class
in every race in the 1984 Clipper Cup Series.

She also was First in Class, Big Boat Series,
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winner of 4 out of 5 races.



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